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الإهداء

إلى روح والدي العزيز وروح أخي الحبيب
إلى والدتي التي علمتني أن أعطي وأن لا انتظر عطاءً
إلى أخي وأخواتي وعمتي
إلى من كانوا معي على الدرب: سمير عوده وروند أبوزعرور
إلى زوجي والأمل المنتظر فلذات كبدي
عمر وتسليم وعلي
إلى كل من علمني حرفاً ومد يد العون لي
إلى كل طالب علم يصبو إلى رضا الباري عز وجل
إلى الصامدين في أرض الرباط
أهدي هذا الجهد المتواضع

الباحثه

رنا أبوزعرور

"سبحانك لا علم لنا إلا ما علمتنا، انك أنت العليم الحكيم"

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2			1:1
7			2:1
9			3:1
10			4:1
11			5:1
13			6:1
14			7:1
15			8:1
17		:	
21			1:2
24			2:2
28			3:2

33	4:2
33	1.4.2
35	2.4.2
36	5.2
37	1.5.2
37	2.5.2
39	:
40	1:3
44	2:3
52	3:3
61	4:3
64	:
65	1:4
65	2:4
66	3:4
68	4:4
68	1:4:4
72	2:4:4
74	3:4:4
77	4:4:4
81	5:4
84	6:4
85	7:4

88	:
88	1:5
88	1:1:5
88	1:1:1:5
90	2:1:1:5
91	2:1:5
93	1:2:1:5
94	2:2:1:5
96	3:1:5
96	1:3:1:5
110	2:3:1:5
123	2:5
123	1:2:5
131	2:2:5
137	3:2:5
151	3.5
153	4.5
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125	()	30
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129	" "	32
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133	" "	35
135	()	36
136	()	37
137	" "	38
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139	" "	40
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(Softwares)

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.(Knirk et. al, 1986)

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(NCTM)

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National Council of Teachers of Mathematics
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(Lawton and Gerschner, 1982)

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.(138: 1999)

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.(138: 1999)

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.(138 : 1999)

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.(1990:148)

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(Self education)

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(%16.2)

. (Vockell, 1992)

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(Visual Basic)

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:(0.01 = α)

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(Visual Basic)

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.(2004/2003)

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(42)

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(Visual Basic)

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(Visual

Basic)

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Achievement Motivation 5:2

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.Software

. (1998)

Hardware

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CMI

CAI

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Computer Assisted Instruction : -1

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(IBM)

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(Heinich. et al., 1989)

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(1989) **(1998)**

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(Battelship), (Space), (Invaders) :

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(Heinich, et. Al., 1989)

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(Heinich, et. al., 1989)

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(Al-Rami, 1990)

.(1998)

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Visual Basic

(VB)

.(www.geocities.com)

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(Dartmouth College in 1960 by John Kemeny and Thomas Kurtz)

(Beginner`s All- Purpose

(Basic)

Symbolic Instruction Code)

GwBasic,)

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.(DOS)

(Qbasic ABasic, Quick Basic

Windows

(Qbasic)

(VB)

(VB)

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(Qbasic)

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(Visual Studio)

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(Visual C++)

(Visual Basic)

(Visual Inter Dev)

(Visual Fox Pro)

MSDN) MSDN

(Visual Source Safe)

(Visual J++)

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windows

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(VB)

Graphical User)

.<http://www.motaz.netfirms.com/index/interduction.htm>(Interface

(V.B)

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%90 (VB)

(Bruce Mc Kinny, 2000)

(DLL)

(Multimedia)

.(Windows)

(Database)

(Visual Basic 6)

(Windows)

OOP

(Object Oriented Programing)

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(6)

(Active X Executables) (Web)

.(Web browser)

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(Dynamic HTML)

(SAPI)

(www.geocities.com) .

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(Objects)

(Bruce Mc

Kinny, 2000)

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(VJ VC)

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<http://www.khayma.com/learnvb/vb1.htm>

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(Data Base)

(SQL)

.(Microsoft SQL Server)

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(VB)

(Active X)

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Access / XL / Word

(Components)

(Active X)

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(EXE)

(DLL–dynamic link library)

4:2

– -Murray ()
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.(1996)

.(142 :1997)

: 1:4:2

(1996)

.(1991)

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:(Academic Aspiration)

1:1:4:2

(2000)

:(Success) 2:1:4:2

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:(Need for Achievement) 4:1:4:2

:(Cognitive Drive) 5:1:4:2

:(Ego Enhancement) 6:1:4:2

:(Need Affiliation) 7:1:4:2

:(Opportunism Tendency) – 8:1:4:2

:(Sentimental Stability)

9:1:4:2

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:Association Theory

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:Cognitive Theory

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:Humanistic Theory (3

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:Psychoanalysis Theory

.(1984) •

:Achievement Motivation 5:2

(1984)

: 1:5:2

: 2:5:2

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:(Achievement Motivation) - -1

(Atkinson)

:(Motivation Attribution Theory & Students) – -2

(1989:42-45)

: (1995)

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.(1984:224)

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	.	4:3

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1971 (Pittsburgh University)

(Individual Instruction)

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(Kang, 1988)

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Blume-schoen –

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(Clayton, 1993)

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(Time shared interactive computer controlled information television)

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(1983) ATTISHA

Microcomputer based tutoring system for self- improving and teaching in arithmetic skills.

(Self teaching)

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(Learning)

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(Algorithm)

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(EDSMI),

Pascal Basic

(ATDES), (NBSA)

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(Silverton

primary school)

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(McDonald, 1983)

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(Klob)

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(Kenney, 1996)

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(Missouri)

.(1999)

(Rinaldi, 1997)

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	(0.01 = α)		-3
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	(0.01= α)		-4
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(Marty, 1985)

425 423

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4:4:4

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6:4

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1 :4

.(162: 1999)

2 :4

(10)	(21)	(2004 /2003)
(64)	(11)	
	(32)	(32)
(1)	(1148)	(1203) (2351)

(1)

37.59	1203	32	10	
35.87	1148	32	11	
36.73	2351	64	21	

.(2004/2003)

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3 :4

(%6.25)

(147)

(4)

.(25 :1998)

(36.7)

(35.78)

(37.59)

(30)

(30)¹

¹ يجوز ان يكون حجم العينة (25) فأعلى لتحقيق احد افتراضات تحليل التباين وتكون نتائجه متمتع به بصدق مقبول عبده (2003).

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30	1			
30	1			
47	1			
40	1			
147	4			

140 7 *

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4 :4

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1:1:4:4

((2)) (50)

(3)

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" "	(F)	(MSS)	(Df)	(SS)	
0.10		0.952	1	0.952	(SSB)
		91.516	138	12629.183	(SSW)
			139	12630.135	(SST)

6.63=

(0.10) " " (3)

(0.01= α) (6.63)

2:1:4:4

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((1)) .

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(50)

.(2)

3:1:4:4

(20)

:(296 : 1999)

(1-4) $\left(\frac{\sum_{\mathcal{E}^2} (\mathcal{C} - 1)_{\mathcal{C}}}{\mathcal{C}^2} - 1 \right) \frac{\mathcal{C}}{(1 - \mathcal{C})} =$

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. (²)

(0.89)

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: **4:1:4:4**

1:4:1:4:4

:(285 : 1999)

(2-4)..... $\%100 \times \frac{ن-ع}{ن} = (م\%)$

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(0.75-0.21)

.%60

2:4:1:4:4

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:(286 : 1999)

(3-4)..... $\%100 \times \frac{ن-ع}{ن} = (م\%)$

(%27)

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(%27)

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(0.69-0.31)

(13)

.(53.64)

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2:4:4

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.(12)

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3:2:4:4

: **(233: 1999)**

1:3:2:4:4

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2:3:2:4:4

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3:4:4

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1:3:4:4

(7)

(50)

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6

(49) (41)

(48)

(90)

.(162 : 1999)

2:3:4:4

(1)

(50)

(7)

3:3:4:4

: (20)

(4-4) $\left(\frac{(\zeta - 1) \sum}{\varepsilon^2} - 1 \right) \frac{\zeta}{(1 - \zeta)} =$

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· (²)

(51.08) (0.83)

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1:3:3:4:4

1:1:3:3:4:4

·(2-4)

:(258: 1999) (16) (%79.5 - %24)

$$\%100 \times \frac{\text{سلي}}{\text{سلي}} =$$

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2:1:3:3:4:4

(4-3)

(0.75-0.25)

(16)

(0.7-0.3)

(15)

2:3:3:4:4

(9)

4:4:4

1:4:4:4

(2000)

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.(10)

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(1982)

(1980)

.(131-129 :1990)

(107-102 :1988)

(69)

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(4) . (69) (207)
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7		F	8		A
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(F)	(MSS)	(Df)	(ss)	
0.008	0.00029	1	0.00029	(SSB)
	0.039	138	4.966	(SSW)
		139	4.96629	(SST)

$$6.63 = (139 - 1 - 0.01)$$

(0.008) " " (5)

(6.63)

(0.01= α)

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2:4:4:4

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$$((11) (10) \quad)$$

$$3:4:4:4$$

1999)

$$:(301 :$$

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$$.:(\quad)$$

$$. \quad (\quad) \quad :({}^2_{\mathcal{E}})$$

$$. \quad :({}^2_{\mathcal{E}})$$

$$. \quad :({}^2_{\mathcal{E}} \overline{\longrightarrow})$$

$$(0.93)$$

$$(0.91)$$

$$.(0.89)$$

5:4

(113 : 1999) :

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2003/11/20 2003/11/19

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1:1:1:5

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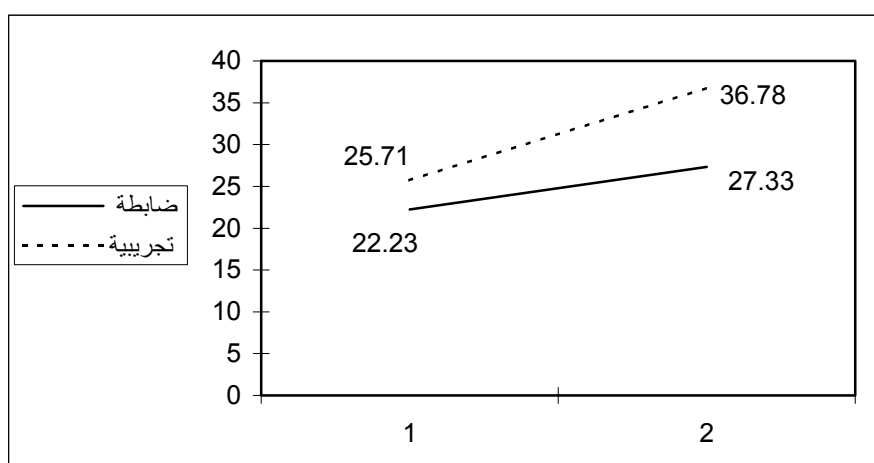
(6)

(6)

22.23	25.71		
8.16	8.12		
30	42		
27.33	36.78		
6.10	8.61		
30	38		

(1)

(1)



(1) (6)

()

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() 2:1:1:5

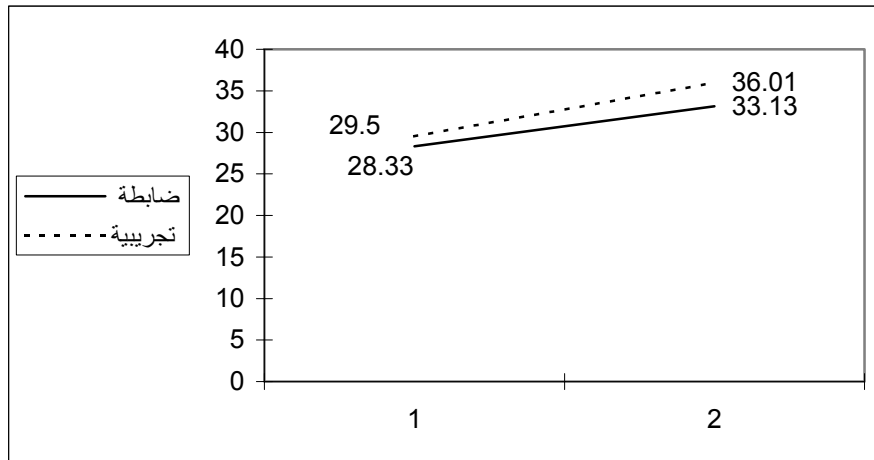
(7) .

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(7)

28.33	29.50		
6.48	9.78		
30	42		
33.13	36.01		
8.85	9.16		
30	38		

(2)



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(7)

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2:1:5

(8)

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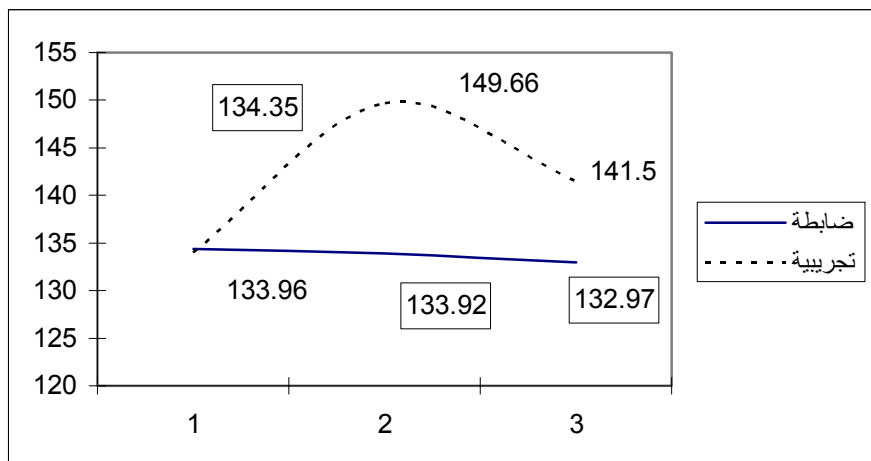
(8)

134.35	133.96		
18.35	20.77		
60	80		
133.92	149.66		
23.33	18.51		
60	80		
132.97	141.50		
19.38	17.63		
60	80		

(3)

(3)

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(3) (8)

1:2:1:5

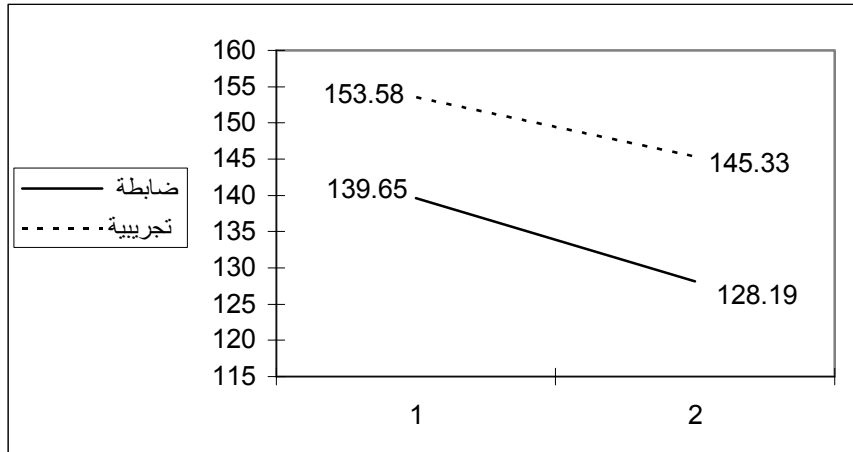
(9) .

(9)

139.65	153.58		
28.14	18.78		
30	42		
128.19	145.33		
15.74	17.43		
30	38		

(4)

(4)



(4)

(9)

2:2:1:5

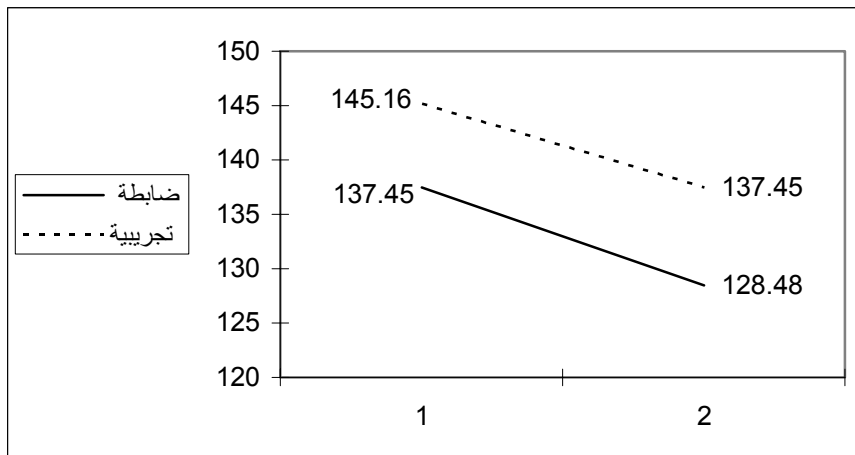
(10)

(10)

137.45	145.16		
18.51	20.83		
30	42		
128.48	137.45		
19.48	12.29		
30	38		

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3:1:5

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1:1:3:1:5

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(11)

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15.76	16.73		
2.64	2.46		
30	42		
15.00	15.60		
2.06	1.91		
30	38		

(6)

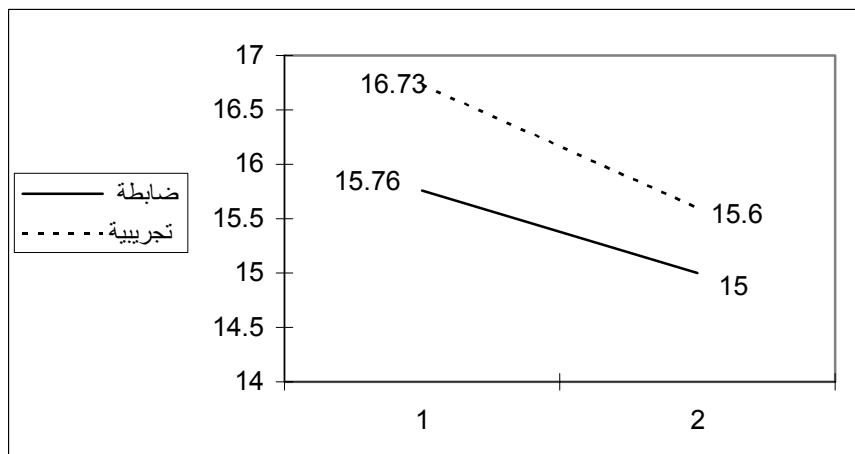
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2:1:3:1:5

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(12)

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(12)

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13.96	15.97		
2.83	1.99		
30	42		
13.56	14.53		
2.43	2.29		
30	38		

(7)

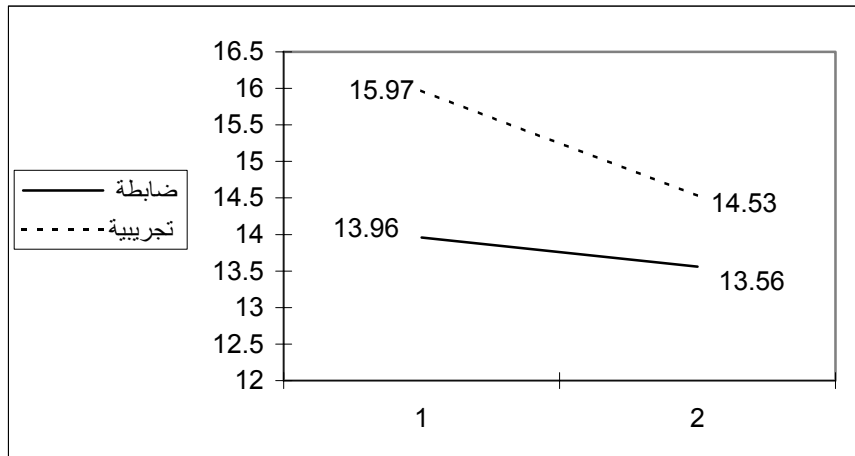
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3:1:3:1:5

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(13)

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(13)

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15.63	17.92		
3.62	2.42		
30	42		
14.26	15.72		
2.74	2.72		
30	38		

(8)

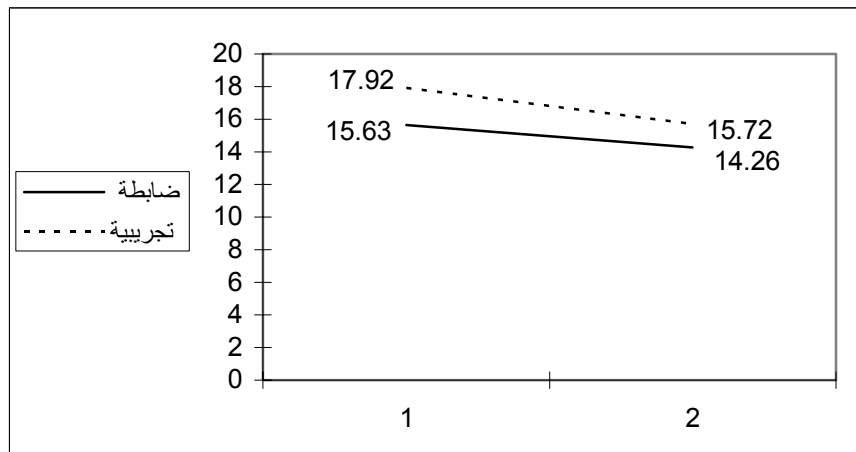
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(14) .

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(14)

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18.53	19.97		
4.07	3.91		
30	42		
16.66	17.89		
2.02	3.52		
30	38		

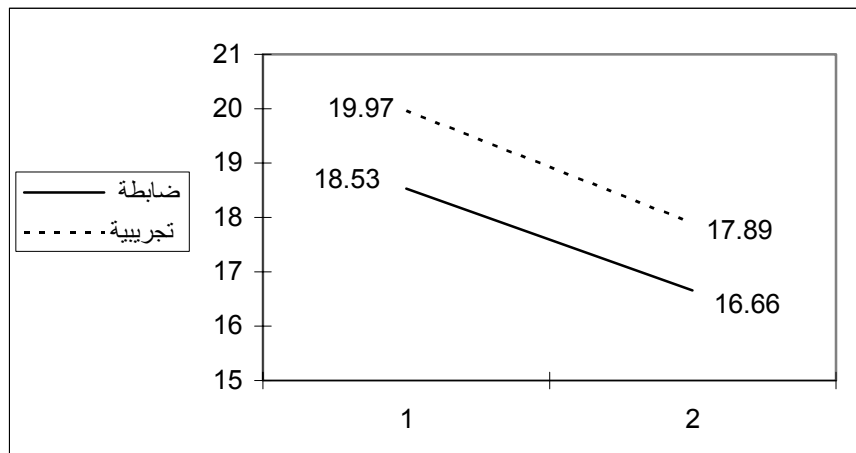
(9)

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5:1:3:1:5

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(15)

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16.5	18.19		
4.14	2.68		
30	42		
14.83	16.68		
2.82	2.63		
30	38		

(10)

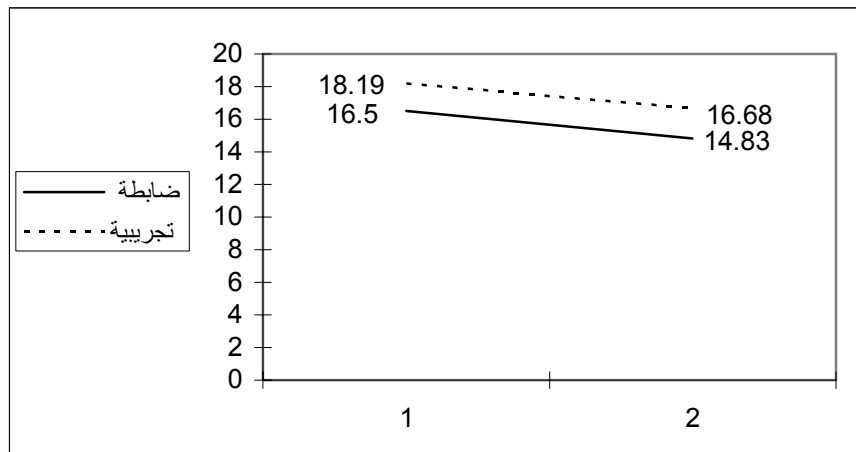
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6:1:3:1:5

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(16)

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(16)

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14.66	16.14		
3.13	2.40		
30	42		
13.93	15.18		
1.94	1.88		
30	38		

(11)

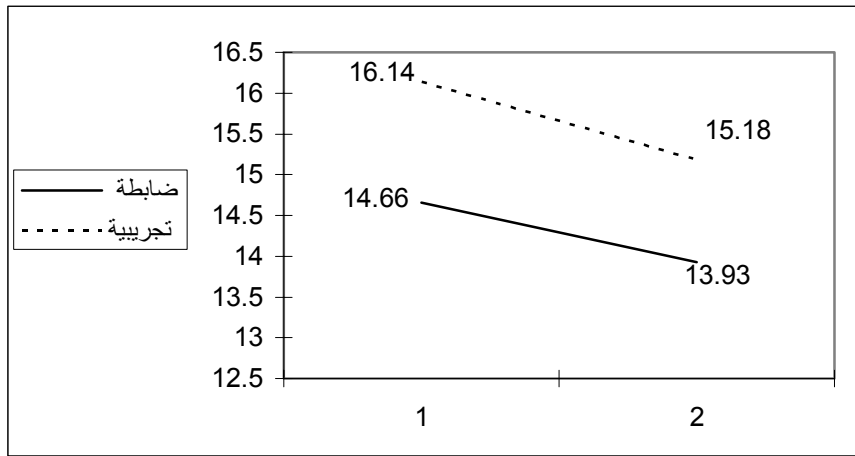
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7:1:3:1:5

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(17)

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(17)

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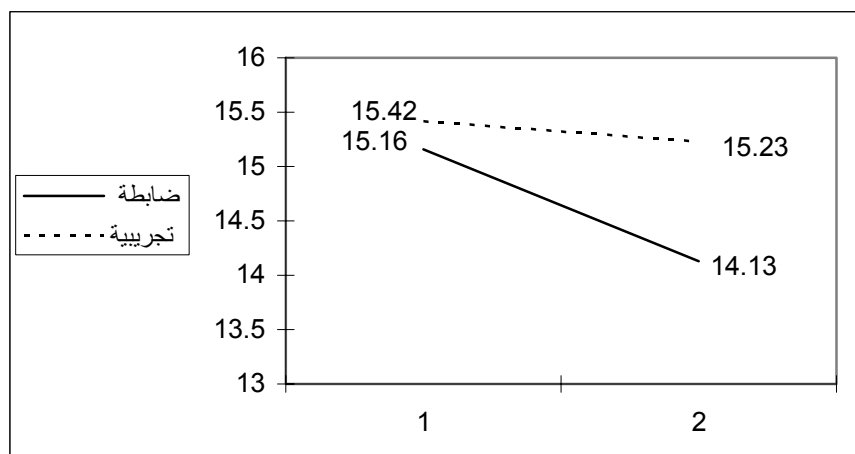
15.16	15.42		
3.02	2.48		
30	42		
14.13	15.23		
1.3	2.23		
30	38		

(12)

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(12)

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8:1:3:1:5

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II

16.43	18.02		
3.44	2.98		
30	42		
14.86	16.18		
1.79	2.44		
30	38		

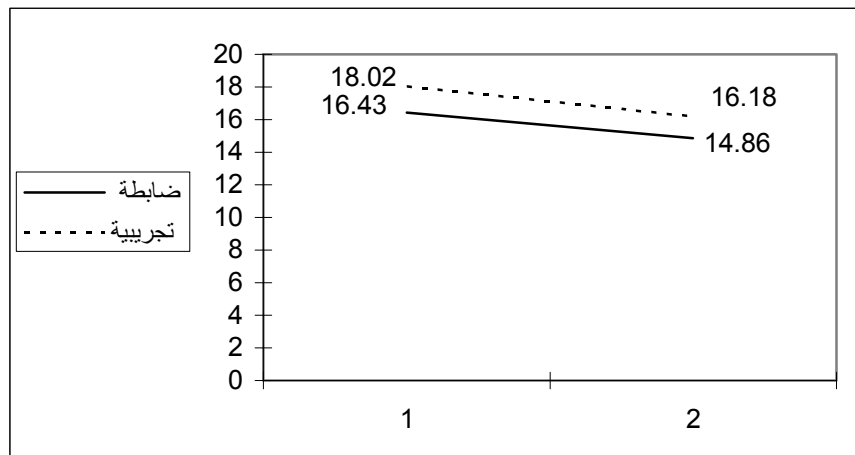
(13)

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9:1:3:1:5

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16.93	17.71		
3.2	2.67		
30	42		
17.63	17.89		
2.28	1.81		
30	38		

(14)

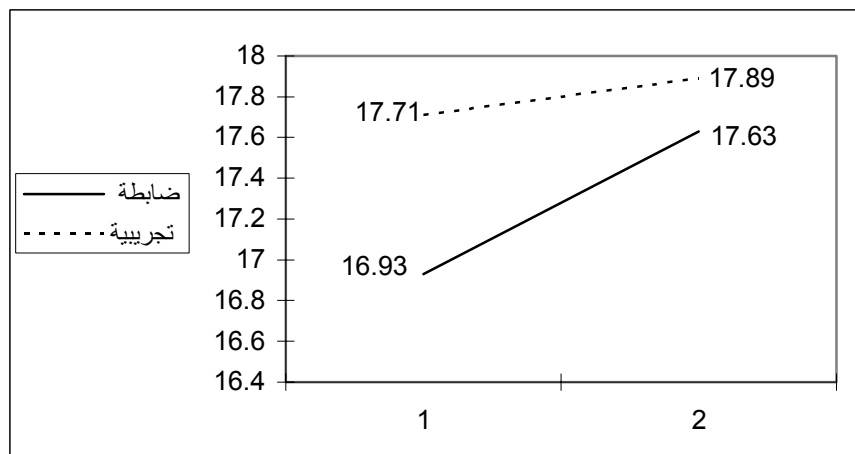
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2:3:1:5

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15.23	16.02		
2.16	2.58		
30	42		
14.06	15.18		
1.83	1.99		
30	38		

(15)

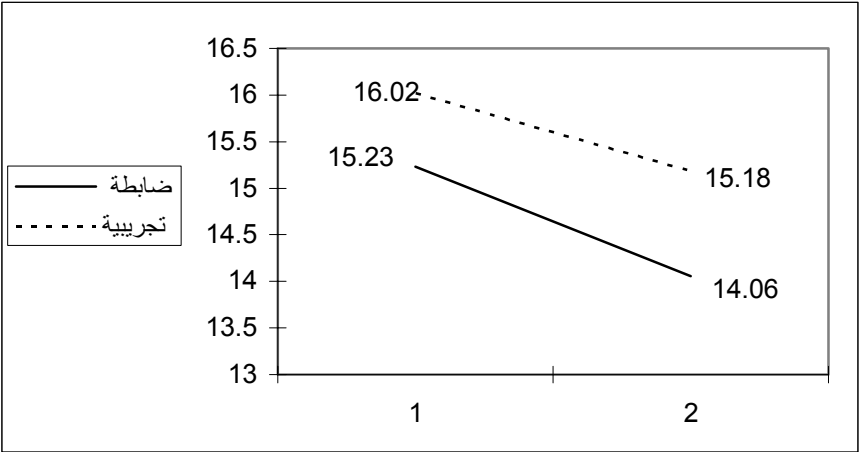
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2:2:3:1:5

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(21)

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(21)

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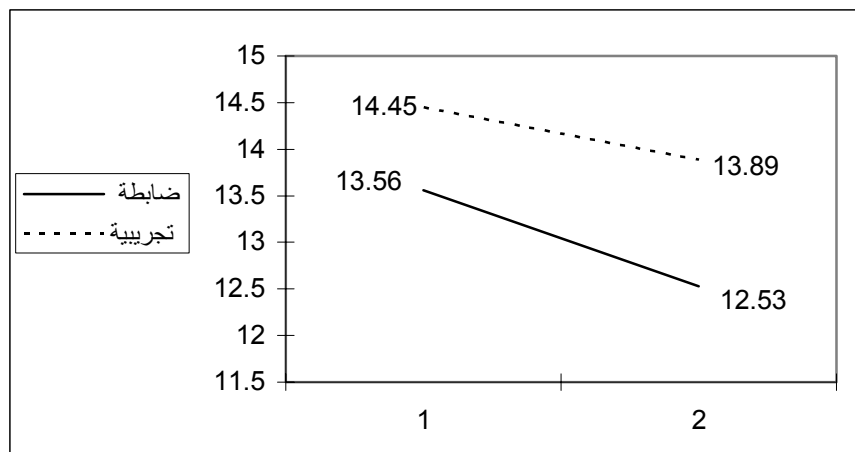
13.56	14.45		
1.86	2.03		
30	42		
12.53	13.89		
1.90	1.41		
30	38		

(16)

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(16)

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(16)

(21)

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3:2:3:1:5

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(22)

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(22)

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14.46	15.71		
2.43	2.67		
30	42		
13.73	14.86		
2.39	1.94		
30	38		

(17)

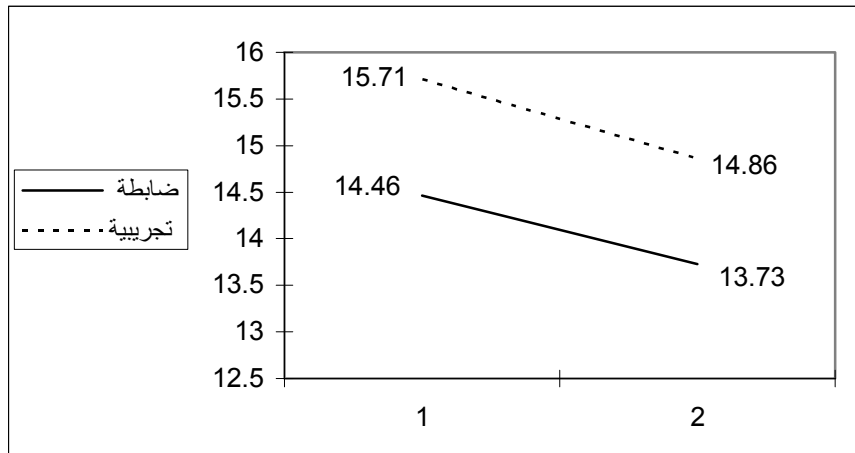
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(17)

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4:2:3:1:5

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(23)

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17.13	18.21		
4.08	3.82		
30	42		
16.16	17.68		
3.32	2.13		
30	38		

(18)

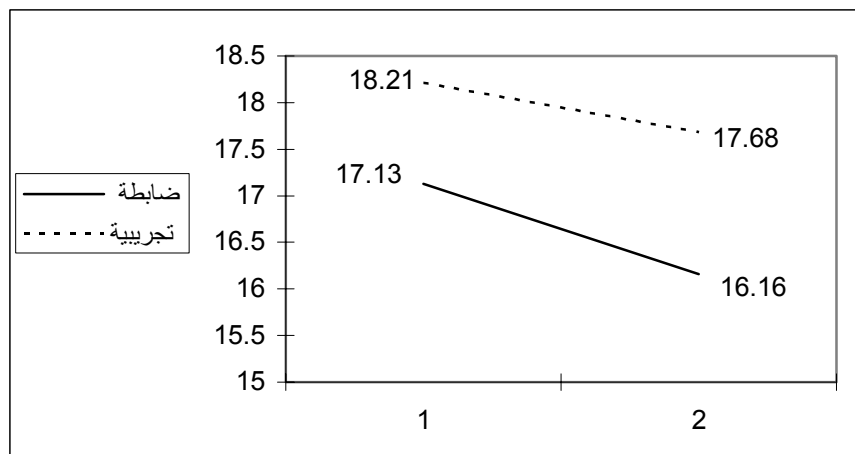
"

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(18)

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(18)

(23)

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"

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" " 5:2:3:1:5

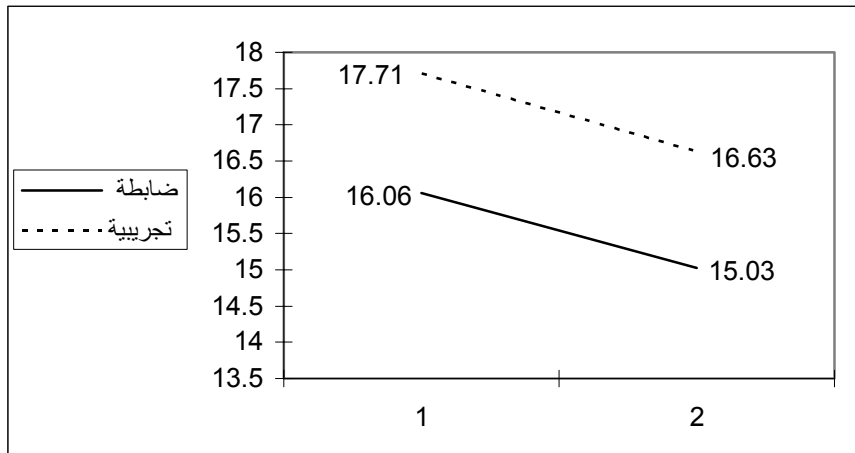
" " (24)

" " (24)

"	"		
16.06	17.71		
3.53	3.18		
30	42		
15.03	16.63		
3.63	1.99		
30	38		

(19) " "

(19)



(19)

(24)

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6:2:3:1:5

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(25)

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(25)

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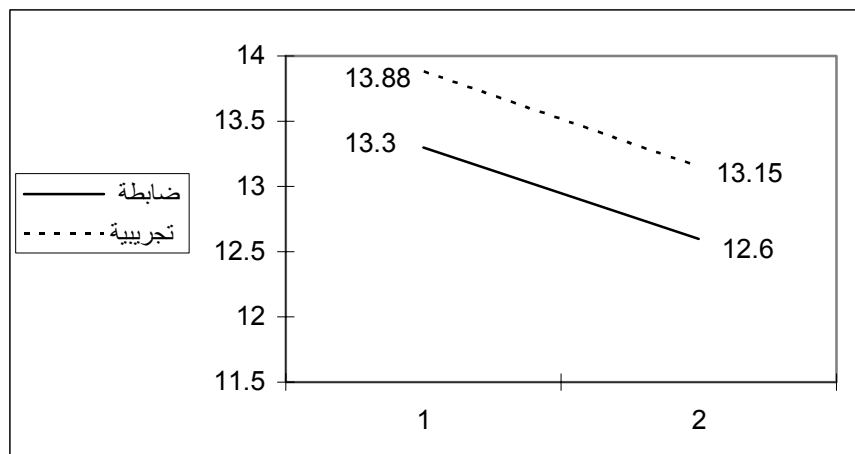
13.3	13.88		
2.57	3.16		
30	42		
12.6	13.15		
2.31	1.76		
30	38		

(20)

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(20)

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(20)

(25)

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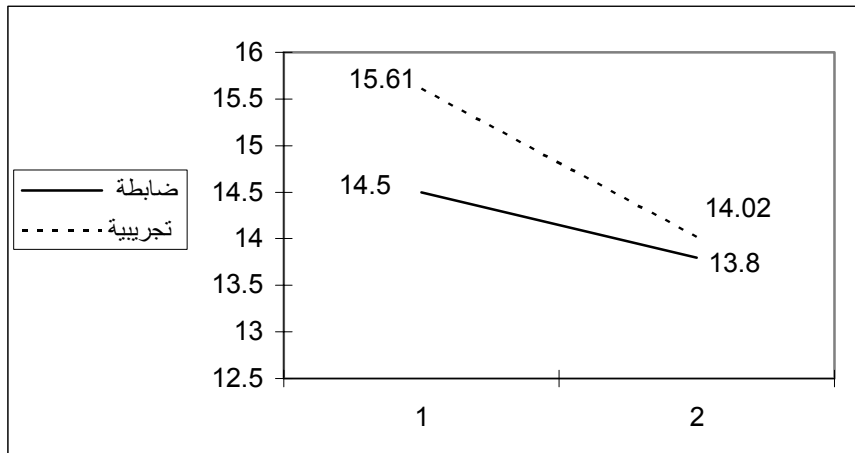
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(21)

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(21)

(26)

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8:2:3:1:5

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(27)

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(27)

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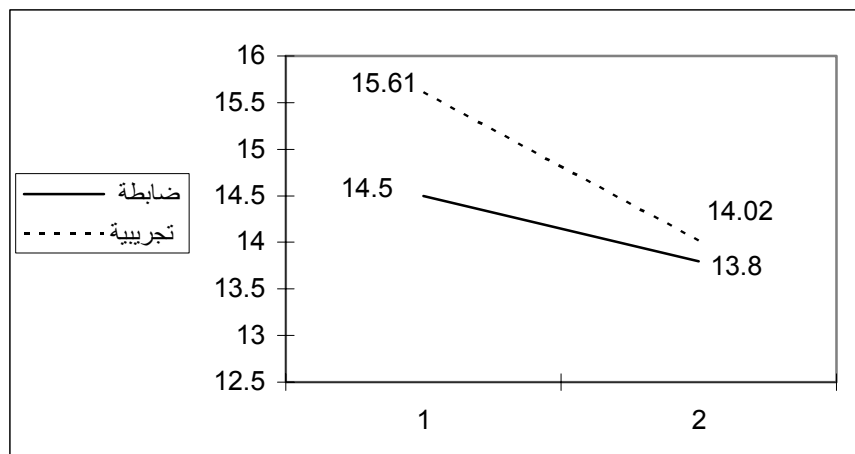
15.20	16.71		
3.28	3.27		
30	42		
14.73	14.84		
3.22	2.76		
30	38		

(22)

" - "

(22)

" - "



(22)

(27)

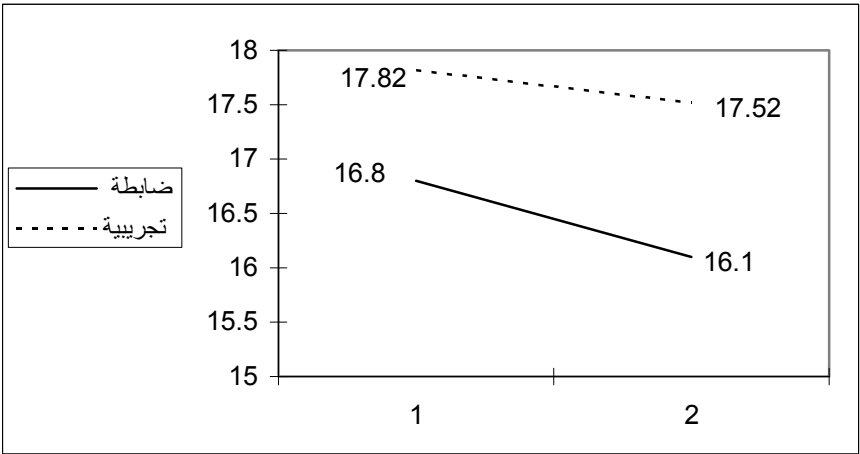
" () "

" - "

(23)

"

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(23)

(28)

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()

"

2:5

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1:2:5

: (0.01= α)

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(Visual

Basic)

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∴ •

()

∴ •

(2×2)

∴

(2×2)

(29)

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(29)

(2×2)

()				
*23.002	1433.047	1	1433.047	()
*35.958	2240.194	1	2240.194	()
4.907	305.696	1	305.696	(×)
	62.301	136	8472.921	
		139	12624.586	

.6.63

(0.01=α)

*

: (29)

:

(0.01= α)

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()

(6.63)

(23.002)

.

()

(30)

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()

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(30)

()

()					
*4.005	138	10.01	30.97	80	
		7.59	24.78	60	

.2.326

(0.01= α)

*

(30)

(4.005)

()

(0.01= α)

(2.326)

(1)

.(121)

()

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(1991)

(1996)

(1993)

(1994)

(1994)

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(1995)

(1988)

.()

:

(0.01= α)

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" "

(6.63)

(35.958)

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" "

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()

(31)

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()

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(31)

()

()					
*5.751	138	8.27	24.26	72	
		8.91	32.61	68	

.2.326

(0.01= α)

*

(31)

()

(0.01= α)

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(31)

(2.326)

(5.751)

()

(0.01= α)

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(1996)

(1992)

(1995)

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(1999)

(1998)

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(0.01= α)

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()

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()

(32)

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()

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(32)

()

()					
*5.936	139	9.53	28.32	140	
		9.22	31.79	140	

.2.326 (0.01= α) *

(32)

(5.936) ()

(0.01= α) (2.326)

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(1999)

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∴

(0.01= α)

•

. (6.63)

(4.910)

()

(29)

()

.

(1999)

.(1998)

2:2:5

: (0.01= α)

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(Visual

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Basic)

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(33)

(2×2)

()				
*20.124	8264.20	1	8264.20	()
*8.096	3324.87	1	3324.87	()
0.217	89.009	1	89.009	×
	410.655	136	55849.13	
		139	67669.618	

.6.63 (0.01=α) *

(34)

(2×2)

()				
*7.306	2381.188	1	2381.188	()
*7.307	2381.589	1	2381.589	()
0.042	13.784	1	13.784	×
	325.928	136	44326.275	
		139		

.6.63 (0.01=α) *

: (34) (33)

:

●

()

(6.63)

.

()

() (35) .

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(35)

()

()						
*4.451	138	18.51	149.66	80		
		23.33	133.92	60		
*2.715	138	17.63	141.50	80		
		19.38	132.97	60		

.2.326 (0.01= α) *

(35)

(2.326) (2.715) (4.451) ()

(0.01= α)

.

(1997)

.(1998)

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()

(6.63)

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()

()

(36)

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(36)

()

()						
*2.744	138	23.98	147.77	72		
		18.67	137.77	68		
*2.717	138	20.13	141.95	72		
		16.37	133.49	68		

.2.326 (0.01= α) *

(36)

(2.744) ()

(2.717) () (2.326)

(0.01= α)

.

()

.

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(0.01= α)

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()

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()

() (37) .

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(37)

()

()					
2.341	139	22.06	142.92	140	
		18.82	137.84	140	

.2.326 (0.01= α)

(37)

(2.341) ()

(0.01= α) (2.326)

.

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. (6.63) ()

(29)

3:2:5

()

1:3:2:5

()

(38)

()

(38)

()

()					
1.589	79	2.27	16.2	80	
		2.34	15.625	80	

.2.326 (0.01= α)

(38)

()

(1.589)

()

(39)

()

(39)

()

()					
2.204	59	2.38	15.38	60	
		2.07	14.65	60	

.2.326 (0.01= α)

(39)

()

.(2.326) (1.589)

2:3:2:5

()

(40)

()

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(40)

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()					
*3.443	79	2.25	15.28	80	
		1.77	14.18	80	

.2.326

(0.01= α)

*

(40)

()

.

(3.443)

.

.

()

()

(41)

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(41)

()

()					
1.721	59	2.62	13.76	60	
		1.94	13.05	60	

.2.326 (0.01= α)

(41)

()

.(2.326) (1.721)

3:3:2:5

()

() (42)

(42)

()

()	()					
2.326	*4.009	79	2.78	16.88	80	
			2.37	15.31	80	

.2.326 (0.01= α) *

(42)

()

(4.009)

()

() (43)

(43)

()

()					
1.747	59	3.25	14.95	60	
		2.41	14.1	60	

.2.326 (0.01= α)

(43)

()

.(2.326) (1.747)

4:3:2:5

()

(44)

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(44)

()

()					
2.03	79	3.85	18.98	80	
		3.12	17.96	80	

.2.326 (0.01= α)

(44)

()

(2.03)

()

(45)

()

.

(45)

()

()					
1.63	59	3.32	17.60	60	
		3.72	16.65	60	

.2.326 (0.01= α)

(45)

()

.(2.326) (1.63)

.

5:3:2:5

()

(46)

()

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(46)

()

()					
0.678	79	2.75	17.47	80	
		2.74	17.20	80	

.2.326 (0.01= α)

(46)

()

. (0.678)

.

()

(47)

()

.

(47)

()

()					
0.192	59	3.61	15.66	60	
		3.59	15.55	60	

.2.326 (0.01= α)

(47)

()

.(2.326)

(0.192)

.

6:3:2:5

()

() (48)

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(48)

()

()					
*6.027	79	2.21	15.68	80	
		2.6	13.53	80	

.2.326 (0.01= α) *

(48)

(6.027) ()

.

.

()

() (49)

(49)

()

()					
*2.899	59	2.61	14.30	60	
		2.45	12.95	60	

.2.326

(0.01= α)

*

(49)

()

.(2.326)

(2.899)

7:3:2:5

()

(50)

()

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(50)

()

()					
1.121	79	2.35	15.33	80	
		3.19	14.86	80	

.2.326 (0.01= α)

(50)

()

. (1.121)

.

()

(51)

()

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(51)

()

()					
1.224	59	2.38	14.65	60	
		2.69	14.15	60	

.2.326 (0.01= α)

(51)

()

.(2.326) (1.224)

.

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8:3:2:5

()

(52)

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()

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(52)

()

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()					
*3.109	79	2.87	17.15	80	
		3.16	15.82	80	

.2.326 (0.01= α)

*

- (52)

-

. (3.109) ()

-

.

()

(53) -

()

.

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(53)

()

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()					
1.303	59	2.83	15.65	60	
		3.23	14.96	60	

.2.326 (0.01= α)

- (53)

-

.(2.326) (1.303) ()

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9:3:2:5

()

(54)

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()

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(54)

()

()					
0	79	2.05	17.68	80	
		2.02	17.68	80	

.2.326 (0.01= α)

(54)

()

(0)

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.

()

(55)

()

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(55)

()

()					
1.786	59	2.78	17.28	60	
		2.31	16.45	60	

.2.326 (0.01= α)

(55)

()

.(2.326) (1.786)

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Microcomputer based tutoring system for self- ATTISHA •
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$$(21 - 16) \qquad [\qquad] \qquad / \qquad ^*$$

$$[\quad] \times 159 = 159 \times 478 \quad (16)$$

$$159 (\quad) \quad 478 (\quad) \quad 487 (\quad) \quad 547 (\quad)$$

$$597 = [\quad] \times 597 \quad (17)$$

$$590 (\quad) \quad 2 (\quad) \quad 1 (\quad) \quad 597 (\quad)$$

$$[\quad] = 30 \div 990$$

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$$[\quad] = 5 + 30 \div 990$$

$$30 (\quad) \quad 38 (\quad) \quad 33 (\quad) \quad 32 (\quad)$$

$$([\quad] \times 49) + (57 \times 49) = (18 + 57) \times 49 \quad (20)$$

$$18 (\quad) \quad 57 (\quad) \quad 49 (\quad) \quad 20 (\quad)$$

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$$\begin{array}{cccc} 5 (& 6 (& 7 (& 8 (\\ & & 18 & (31 \end{array}$$

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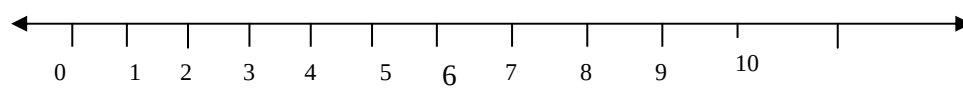
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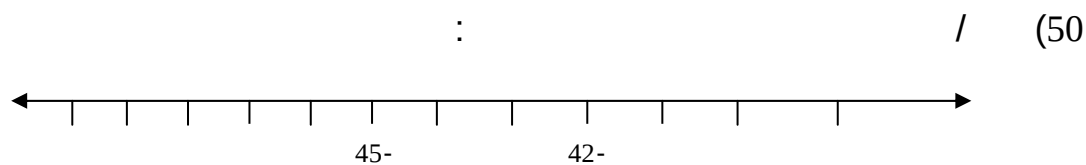
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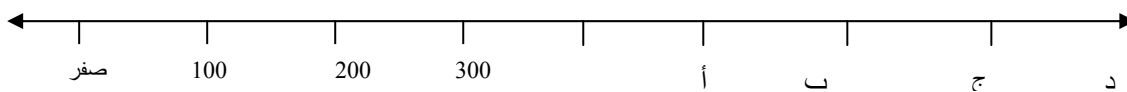
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$$(24) \quad (6) \quad (9$$

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$$: \quad (14-12) \quad *$$

$$----- = 2 \div 14 + 8 \times 7 \quad (12$$

$$63 \quad (\quad 35 \quad (\quad 77 \quad (\quad 8 \quad ($$

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$$----- = (6 \div 18) \times 9 \quad (14$$

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$$----- = 2832 + (1119+4501) \quad (15$$

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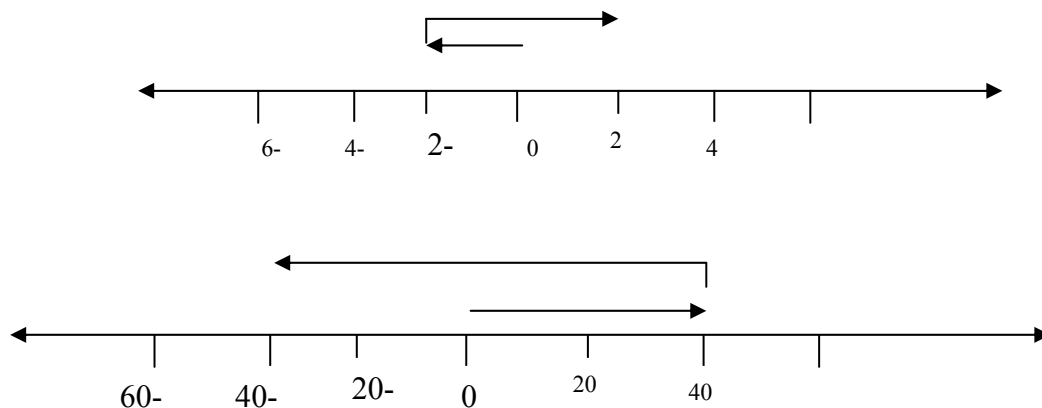
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$$(80-40 \quad +4 \quad +2^+) (\quad (\quad +80+40^- \quad 4- \quad 4+2^-) ($$

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$$(- \quad -) (\times \times) (+ \quad +) ($$

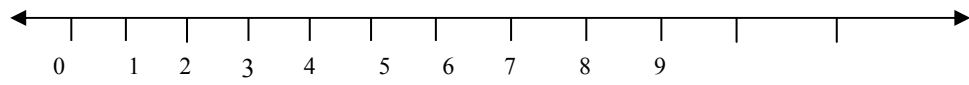
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$$(10) \qquad (200) \qquad (5) \qquad (20) \qquad)$$

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$$\{5, 4 \ 2^-\} \cup \{3^- \ 2 \ 1\} \tag{30}$$

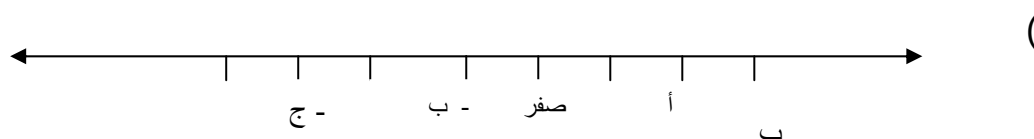
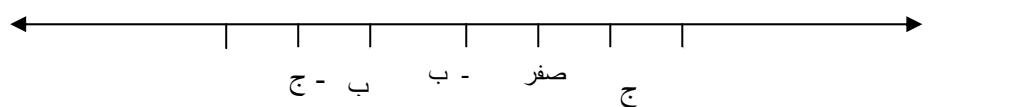
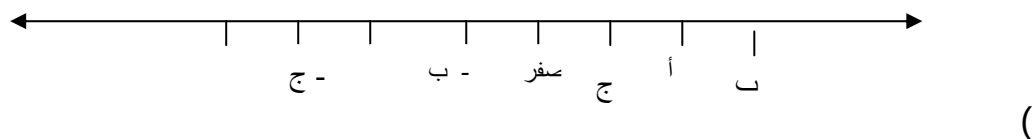
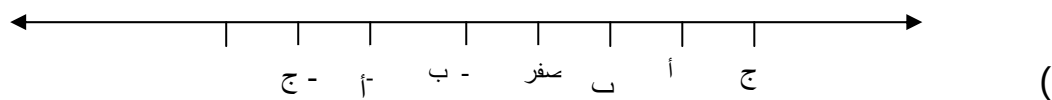
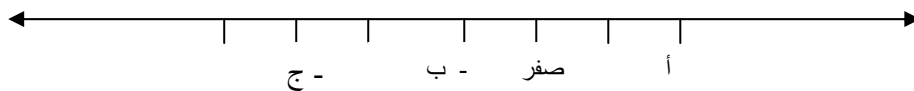
$$\{5 \ 4 \ 2^- \ 3^- \ 1,2\} ($$

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$$: \quad (\quad - \quad - \quad) \quad (31)$$



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$$45 (\quad 80 (\quad 45^- (\quad 85^- ($$

$$(130+210)-125 \ (35$$

$$85^- (\quad 85 (\quad 215 (\quad 215^- ($$

$$2^- \times (7 + 5^-) \ (36$$

$$14^- (\quad 4^- (\quad 2^- (\quad 2 ($$

$$(8^-)^- \times 4^- \ (37$$

$$12 (\quad 12^- (\quad 32^- (\quad 32 ($$

$$: \quad (38$$

$$/ \quad \{ \phi \{1,2\} \{2\} \{1\} \} =$$

ϕ	$\{1,2\}$	$\{2\}$	$\{1\}$	$\cup$
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$\{2\}$	$\{1,2\}$	$\{2\}$	$\{1,2\}$	$\{2\}$
$\{1,2\}$	$\{1,2\}$	$\{1,2\}$	$\{1,2\}$	$\{1,2\}$
ϕ	$\{1,2\}$	$\{2\}$	$\{1\}$	ϕ

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ϕ	$\{1,2\}$	$\{2\}$	$\{1\}$	$\cup$
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$\{2\}$	$\{1,2\}$	$\{2\}$	$\{2\}$	$\{2\}$
$\{1,2\}$	$\{1\}$	$\{1,2\}$	$\{1,2\}$	$\{1,2\}$
ϕ	$\{1,2\}$	$\{2\}$	$\{1\}$	ϕ

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ϕ	$\{1,2\}$	$\{2\}$	$\{1\}$	$\cup$
$\{1\}$	$\{2\}$	$\{1,2\}$	$\{1,2\}$	$\{1\}$
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ϕ	$\{1,2\}$	$\{2\}$	$\{1\}$	$\cup$
$\{1\}$	$\{2\}$	$\{1,1\}$	$\{1,2\}$	$\{1\}$
$\{2,2\}$	$\{1,1\}$	$\{2\}$	$\{2\}$	$\{2\}$
$\{1,2\}$	$\{1\}$	$\{2,1\}$	$\{1,2\}$	$\{1,2\}$
ϕ	$\{2\}$	$\{2\}$	$\{1\}$	ϕ

: $((25) (\quad) (25^-))$ (39

$(25^- \quad 25) (\quad (25^- \quad - \quad 25^-) ($

$$: \tag{44}$$

$$= \begin{array}{c} \bullet \\ \bullet \\ \bullet \end{array} \times \begin{array}{cccc} \bullet & \bullet & \bullet & \bullet \\ \bullet & \bullet & \bullet & \bullet \\ \bullet & \bullet & \bullet & \bullet \end{array} \times \begin{array}{ccccc} & & \bullet & & \\ & \bullet & \bullet & \bullet & \\ & \bullet & \bullet & \bullet & \\ \bullet & \bullet & \bullet & \bullet & \end{array}$$

$$423 \, (\qquad 324^- \, (\qquad 342 \, (\qquad 324 \, ($$

$$(\,) \qquad (\,) \tag{45}$$

$$:$$

$$(\, \cap \, ^+) \qquad (\, ^+ \cap \, ^-) \qquad (\, ^- \cup \,)$$

$$^+ \, \phi \, (\qquad ^- \, \phi \, (\qquad ^- \, \phi \, ^+ (\, \phi \, ^+ \, ^+ ($$

$$24^- = \quad - 8^- : \qquad (\,) \tag{46}$$

$$42^- \, (\qquad 16^- \, (\qquad 42 \, (\qquad 16 \, ($$

$$: \tag{47}$$

$$+ \qquad \ni \qquad 12^- + 4 = 4 + 12^- \qquad (12 + 6) + 18 = 12 + (6 + 18) \qquad \ni$$

$$(\qquad) (\qquad (\qquad) ($$

$$(\qquad) (\qquad (\qquad) ($$

$$(48$$

60		
10		6
5	2	3

120			
20		8	
10	2	4	
5	2	1	4

45		
6		9
9	1	6

(

160				
8		20		
2	10	4		
5		2	1	4

45		
6		9
9	1	6

(

160			
20		8	
10	2	4	
5	2	1	4

54		
9		6
9	1	6

(

160			
120		4	
2	10	8	
5	2	1	4

54		
1		8
9	1	6

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				41					21					1
				42					22					2
				43					23					3
				44					24					4
				45					25					5
				46					26					6
				47					27					7
				48					28					8
									29					9
									30					10
									31					11
									32					12
									33					13
									34					14
									35					15
									36					16
									37					17
									38					18
									39					19
									40					20

(9)

	41		21		1
	42		22		2
	43		23		3
	44		24		4
	45		25		5
	46		26		6
	47		27		7
	48		28		8
			29		9
			30		10
			31		11
			32		12
			33		13
			34		14
			35		15
			36		16
			37		17
			38		18
			39		19
			40		20

(10)

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				(A)
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				3
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				5
				6
				7
				8
				(B)
				9
				10
				11
				12
				13
				14
				15
				(C)
				16
				17
				18
				19
				20
				21
				22
				(D)
				23
				24
				25

				26
			.	27
				28
				29
				30
				31
				(E)
				32
				33
				34
				35
				36
				37
				38
				39
				(F)
				40
				41
				42
				43
				44
				45
				46
				(G)
				47
				48
				49
				50

				51
				52
				53
				(H)
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				57
			" "	58
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				(I)
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				64
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				66
				67
				68
				69

(11)

D		C		B		A	
	23		16		9		1
	24		17		10		2
	25		18		11		3
	26		19		12		4
	27		20		13		5
	28		21		14		6
	29		22		15		7
	30	-	-	-	-		8
	31	-	-	-	-	-	-
H		G		F		E	
	54		47		40		32
	55		48		41		33
	56		49		42		34
	57		50		43		35
	58		51		44		36
	59		52		45		37
	60		53		46		38
-	-	-	-	-	-		39
			I				الرقم
-	-		67		64		61
-	-		68		65		62
-	-		69		66		63

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$$207 = 3 \times 9 + 3 \times 7 + 3 \times 7 + 3 \times 7 + 3 \times 8 + 3 \times 9 + 3 \times 7 + 3 \times 7 + 3 \times 8$$

(12)

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(13)

(140)

%58.4	%75	26	%31.4	%50.7	1
%57.1	%46.4	27	%37.1	%70	2
%54.3	%42.1	28	%54.3	%56.4	3
%62.8	%48.6	29	%42.8	%72.9	4
%51.4	%67.1	30	%51.4	%63.6	5
%54.3	%61.4	31	%48.6	%22.9	6
%54.3	%56.4	32	%62.8	%43.6	7
%57.1	%52.9	33	%54.3	%42.9	8
%48.6	%46.4	34	%54.3	%55.7	9
%45.7	%75	35	%51.4	%52.1	10
%51.4	%61.4	36	%45.7	%37.9	11
%65.7	%44.3	37	%45.7	%63.6	12
%68.6	%44.3	38	%45.7	%38.6	13
%60	%40.7	39	%57.1	%57.9	14
%54.3	%22.9	40	%57.1	%45	15
%42.8	%22.1	41	%54.3	%53.6	16
%48.6	%29.3	42	%48.6	%65	17
%57.1	%41.4	43	%57.1	%47.9	18
%54.3	%53.6	44	%57.1	%54.3	19
%54.3	%43.6	45	%62.8	%35.7	20
%60	%33.6	46	%65.7	%60	21
%60	%30.7	47	%60	%52.9	22
%42.8	%27.1	48	%65.7	%43.6	23
%57.1	%39.3	49	%45.7	%61.4	24
%45.7	%21.4	50	%65.7	%42.9	25

(14)

(18)

%20	%94.4	26	%40	%27.8	1
%20	%94.4	27	%60	%83.2	2
%40	%83.3	28	%60	%77.8	3
%40	%77.8	29	%40	%88.9	4
%20	%94.4	30	%40	%88.9	5
%60	%77.8	31	%60	%44.45	6
%40	%83.2	32	%60	%44.45	7
%40	%83.2	33	%60	%44.45	8
%80	%50	34	%60	%27.8	9
%20	%94.4	35	%80	%66.7	10
%40	%83.3	36	%60	%55.55	11
%80	%44.45	37	%40	%88.9	12
%80	%88.9	38	%80	%38.9	13
%60	%72.2	39	%80	%72.2	14
%60	%27.8	40	%60	%22.2	15
%60	%55.55	41	%80	%72.2	16
%60	%50	42	%40	%83.2	17
%40	%72.2	43	%80	%66.7	18
%60	%72.2	44	%60	%72.2	19
%80	%66.7	45	%60	%44.45	20
%80	%50	46	%40	%66.7	21
%60	%61.1	47	%60	%83.2	22
%40	%11.1	48	%60	%72.2	23
%40	%72.2	49	%40	%88.9	24
%20	%56	50	%40	%88.9	25

(15)

(18)

%50	%56.3	26	%25	%62.5	1
%50	%50	27	%25	%87.5	2
%50	%81.3	28	%50	%87.5	3
%50	%43.8	29	%50	%75	4
%25	%56.3	30	%50	%68.8	5
%75	%56.3	31	%75	%50	6
%50	%50	32	%50	%56.3	7
%75	%62.5	33	%75	%50	8
%50	%43.8	34	%50	%50	9
%75	%50	35	%25	%68.8	10
%50	%37.5	36	%50	%62.5	11
%50	%43.8	37	%25	%93.8	12
%75	%31.3	38	%75	%43.8	13
%75	%37.5	39	%25	%81.3	14
%75	%37.5	40	%50	%50	15
%50	%43.8	41	%25	%68.8	16
%75	%50	42	%25	%75	17
%75	%25	43	%25	%68.8	18
%75	%31.3	44	%25	%75	19
%75	%37.5	45	%75	%50	20
%50	%31.3	46	%75	%62.5	21
%75	%62.5	47	%75	%81.3	22
%50	%12.5	48	%75	%68.8	23
			%50	%62.5	24
			%25	%81.3	25

(16)

(140)

%42.8	%77.1	26	%34.3	%55.7	1
%60	%47.1	27	%45.7	%70.7	2
%57.1	%48.6	28	%40	%58.6	3
%51.4	%52.9	29	%14.3	%75	4
%51.4	%70.7	30	%20	%64.3	5
%57.1	%62.9	31	%37.1	%23.6	6
%51.4	%57.9	32	%51.4	%45.7	7
%51.4	%42.9	33	%60	%79.5	8
%60	%48.6	34	%48.6	%57.1	9
%51.4	%76.4	35	%45.7	%53.6	10
%65.7	%64.3	36	%42.8	%42.1	11
%71.4	%46.4	37	%40	%63.6	12
%65.7	%45.7	38	%31.4	%40.7	13
%68.6	%42.9	39	%40	%60	14
%40	%27.9	40	%51.4	%47.9	15
%51.4	%31.4	41	%65.7	%54.3	16
%65.7	%42.9	42	%40	%65	17
%37.1	%46.4	43	%60	%50	18
%45.7	%45	44	%42.8	%56.4	19
%54.3	%35.7	45	%48.6	%39.3	20
%62.8	%32.1	46	%48.6	%61.4	21
%65.7	%35	47	%40	%55	22
%54.3	%30.7	48	%54.3	%48.6	23
			%51.4	%64.3	24
			%51.4	%46.4	25

(17)

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20.00	27.00		31	26.00	15.00		1
24.00	27.00	- - -	32	30.00	26.00	- - -	2
40.00	27.00	- - -	33	18.00	10.00	- - -	3
12.00	23.00	- - -	34	26.00	26.00	- - -	4
43.00	22.00	- - -	35	16.00	15.00	- - -	5
41.00	29.00	- - -	36	32.00	31.00	- - -	6
36.00	32.00	- - -	37	34.00	27.00	- - -	7
32.00	19.00	- - -	38	36.00	34.00	- - -	8
43.00	25.00	- - -	39	33.00	22.00	- - -	9
41.00	30.00	- - -	40	30.00	18.00	- - -	10
22.00	19.00	- - -	41	28.00	28.00	- - -	11
19.00	28.00	- - -	42	24.00	18.00	- - -	12
34.00	28.00	- - -	43	37.00	30.00	- - -	13
33.00	26.00	- - -	44	35.00	27.00	- - -	14
29.00	20.00	- - -	45	33.00	26.00	- - -	15
34.00	27.00		46	25.00	20.00	- - -	16
46.00	45.00	- - -	47	25.00	18.00	- - -	17
35.00	27.00	- - -	48	36.00	19.00	- - -	18
31.00	17.00	- - -	49	27.00	18.00	- - -	19
46.00	40.00	- - -	50	25.00	22.00	- - -	20
33.00	27.00	- - -	51	30.00	25.00	- - -	21
24.00	28.00	- - -	52	23.00	9.00	- - -	22
40.00	31.00	- - -	53	16.00	7.00	- - -	23
41.00	36.00	- - -	54	25.00	27.00	- - -	24
23.00	23.00	- - -	55	14.00	7.00	- - -	25
36.00	33.00	- - -	56	24.00	16.00	- - -	26
29.00	27.00	- - -	57	35.00	34.00	- - -	27
26.00	26.00	- - -	58	34.00	34.00	- - -	28
30.00	21.00	- - -	59	34.00	23.00	- - -	29
45.00	34.00	- - -	60	35.00	37.00	- - -	30

40.00	36.00		103	20.00	14.00		61
46.00	43.00	- - -	104	27.00	28.00	- - -	62
32.00	34.00	- - -	105	32.00	28.00	- - -	63
28.00	23.00	- - -	106	33.00	25.00	- - -	64
10.00	33.00	- - -	107	13.00	14.00	- - -	65
26.00	18.00	- - -	108	28.00	20.00	- - -	66
23.00	33.00	- - -	109	38.00	29.00	- - -	67
32.00	34.00	- - -	110	37.00	33.00	- - -	68
34.00	34.00	- - -	111	26.00	25.00	- - -	69
44.00	42.00	- - -	112	35.00	27.00	- - -	70
23.00	20.00	- - -	113	28.00	23.00	- - -	71
48.00	44.00	- - -	114	34.00	23.00	- - -	72
24.00	33.00	- - -	115	2.00	19.00	- - -	73
40.00	44.00	- - -	116	27.00	21.00	- - -	74
40.00	46.00	- - -	117	18.00	28.00	- - -	75
44.00	42.00	- - -	118	26.00	33.00	- - -	76
45.00	46.00	- - -	119	16.00	17.00	- - -	77
35.00	39.00	- - -	120	27.00	36.00	- - -	78
45.00	47.00	- - -	121	28.00	24.00	- - -	79
35.00	43.00	- - -	122	33.00	21.00	- - -	80
37.00	32.00	- - -	123	27.00	16.00	- - -	81
44.00	44.00	- - -	124	26.00	23.00	- - -	82
34.00	41.00	- - -	125	15.00	9.00	- - -	83
16.00	19.00	- - -	126	20.00	13.00	- - -	84
36.00	28.00	- - -	127	32.00	27.00	- - -	85
31.00	30.00	- - -	128	29.00	31.00	- - -	86
47.00	47.00	- - -	129	26.00	32.00	- - -	87

37.00	42.00	- - -	130	16.00	11.00	- - -	88
38.00	34.00	- - -	131	35.00	26.00	- - -	89
33.00	43.00	- - -	132	17.00	17.00	- - -	90
47.00	48.00	- - -	133	34.00	31.00	- - -	91
47.00	48.00	- - -	134	25.00	18.00	- - -	92
25.00	29.00	- - -	135				
42.00	32.00	- - -	136	47.00	36.00	- - -	93
37.00	39.00	- - -	137	32.00	32.00	- - -	94
34.00	27.00	- - -	138	42.00	41.00	- - -	95
47.00	49.00	- - -	139	50.00	42.00	- - -	96
				38.00	28.00	- - -	97
36.00	37.00	- - -	140	45.00	26.00	- - -	98
				33.00	34.00	- - -	99
				40.00	37.00	- - -	100
				35.00	27.00	- - -	101
				38.00	38.00	- - -	102

(18)

135	128	135		31	138	124	145		1
120	93	124	- - -	32	139	135	145	- - -	2
136	135	145	- - -	33	128	124	155	- - -	3
135	124	124	- - -	34	148	127	124	- - -	4
124	104	124	- - -	35	140	147	135	- - -	5
145	114	135	- - -	36	151	147	145	- - -	6
152	116	104	- - -	37	142	114	135	- - -	7
124	135	114	- - -	38	144	104	155	- - -	8
135	124	135	- - -	39	120	166	114	- - -	9
170	121	135	- - -	40	140	120	114	- - -	10
149	135	124	- - -	41	121	135	197	- - -	11
145	137	124	- - -	42	119	117	166	- - -	12
93	145	135	- - -	43	139	186	135	- - -	13
104	149	114	- - -	44	112	104	145	- - -	14
105	145	114	- - -	45	124	129	155	- - -	15
110	124	135	- - -	46	135	104	165	- - -	16
152	125	135	- - -	47	166	110	165	- - -	17
113	145	135	- - -	48	101	176	114	- - -	18
135	111	124	- - -	49	124	166	104	- - -	19
107	114	135	- - -	50	129	145	178	- - -	20
104	120	124	- - -	51	145	166	124	- - -	21
114	122	135	- - -	52	155	104	134	- - -	22
110	114	103	- - -	53	133	197	135	- - -	23
120	117	114	- - -	54	149	176	145	- - -	24
126	155	114	- - -	55	124	135	145	- - -	25
135	124	145	- - -	56	145	124	135	- - -	26
105	135	166	- - -	57	176	186	145	- - -	27
153	145	135	- - -	58	188	176	124	- - -	28
153	126	124	- - -	59	135	135	135	- - -	29
148	166	114	- - -	60	114	117	124	- - -	30

173	145	114		103	186	156	124		61
135	144	104	- - -	104	145	141	124	- - -	62
124	156	134	- - -	105	134	145	155	- - -	63
166	135	135	- - -	106	197	175	166	- - -	64
124	145	135	- - -	107	145	149	124	- - -	65
145	176	123	- - -	108	135	159	178	- - -	66
140	159	104	- - -	109	159	147	134	- - -	67
145	138	145	- - -	110	135	166	145	- - -	68
135	135	114	- - -	111	145	149	145	- - -	69
114	177	145	- - -	112	132	146	145	- - -	70
133	178	114	- - -	113	104	176	166	- - -	71
124	186	111	- - -	114	145	139	145	- - -	72
122	116	93	- - -	115	142	166	166	- - -	73
130	145	124	- - -	116	186	176	176	- - -	74
135	104	145	- - -	117	150	138	145	- - -	75
147	150	132	- - -	118	145	186	187	- - -	76
135	149	144	- - -	119	140	168	104	- - -	77
134	124	124	- - -	120	161	136	155	- - -	78
145	145	102	- - -	121	135	145	114	- - -	79
135	170	121	- - -	122	163	207	114	- - -	80
129	145	145	- - -	123	134	134	165	- - -	81
135	166	136	- - -	124	104	144	124	- - -	82
144	145	135	- - -	125	144	186	166	- - -	83
155	147	124	- - -	126	140	155	145	- - -	84
135	135	120	- - -	127	130	167	124	- - -	85
135	139	155	- - -	128	176	162	166	- - -	86
140	133	95	- - -	129	145	197	135	- - -	87
124	129	104	- - -	130	157	134	135	- - -	88
135	124	124	- - -	131	135	153	156	- - -	89
139	138	147	- - -	132	166	137	124	- - -	90
142	124	135	- - -	133	104	128	135	- - -	91
137	137	120	- - -	134	129	135	114	- - -	92
132	155	114	- - -	135	147	140	155		93

135	144	124	- - -	136	114	145	145	- - -	94
144	145	104	- - -	137	145	139	135	- - -	95
136	138	135	- - -	138	145	149	144	- - -	96
166	149	136	- - -	139	136	145	135	- - -	97
136	154	92	- - -	140	135	140	155	- - -	98
					141	136	104	- - -	99
					166	135	135	- - -	100
					180	176	145	- - -	101
					145	145	155	- - -	102

(19)



الدرس الأول

مجموعة الاعداد الصحيحة

درس الأول

مجموعة الأعداد الصحيحة هي $\{ \dots, -3, -2, -1, 0, 1, 2, 3, \dots \}$

وهي تنقسم إلى ٣ أقسام

$\{ \dots, -3, -2, -1 \} =$ -ص

صفر

$\{ 1, 2, 3, \dots \} =$ +ص

أي أن ص = +ص -ص -ص



اختبار

نشاط

مثال ٢

مثال ١



عرض فلاش

الدرس الأول

مجموعة الاعداد الصحيحة

ثال الأول

عبر عن الجمل التالية باستخدام الأعداد الصحيحة

+5	ربح محمد (٥) دنانير
-3	خسارة أحمد (٣) دنانير
+10	إيداع عبيد (١٠) دنانير في حسابها البنكي
*	سحب (٥) دنانير من حساب التوفير
*	ارتفاع درجة حرارة الميزان إلى (٣) درجات فوق الصفر
*	ارتفاع باريس (٦) أمتار فوق سطح البحر
*	انخفاض أريحا (٣٠٠) متر تحت سطح البحر
*	تقدم أحمد (٣) خطوات للأمام ثم رجع (٣) خطوات إلى الخلف



الدرس الأول

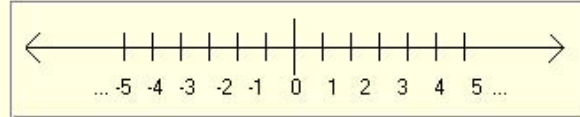
مجموعة الأعداد الصحيحة

مثال الثاني

مطلوب في هذا المثال أن نحدد موقع العدد الصحيح على خط الأعداد

وقبل البدء يشار إلى الملاحظات التالية

— يمكن تمثيل الأعداد الصحيحة على خط الأعداد كما يلي



— تقع الأعداد الموجبة إلى يمين الصفر بينما السالبة إلى يسار الصفر

— قيمة العدد هي بعده عن الصفر وإشارة العدد هي جهته (اليمين موجب و اليسار سالب

--- < إلى المثال

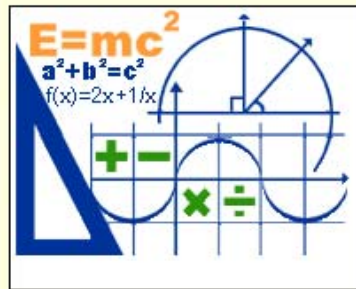


الدرس الثاني

معكوس العدد

الدرس الثاني - معكوس العدد

ل عدد صحيح عدد معكوس .. ويقال ان العددين معكوسين (أي أحدهما معكوس الآخر إذا



— وقعا على نقطتين على خط الأعداد تبعدان المسافة نفسها عن الصفر

— وتقعان في جهتين مختلفتين بالنسبة للصفر

— وتكون بذلك اشارتيهما مختلفتين

— وذلك مثل ٣ ، ٢ و ٧ ، ٢ و ٣ ، ٢

اختبار

نشاط

مثال ٢

مثال ١



عرض فلاش

القيمة المطلقة

الدرس الثالث

لقيمة المطلقة - مقدمة

تعريفات أساسية

القيمة المطلقة هي عبارة تطلق على المسافة بين أي عدد صحيح والصفر

وبذلك تكون القيمة المطلقة دائماً موجبة حيث أنها تعبر عن المسافة

القيمة المطلقة للعدد a = القيمة المطلقة لمعكوس a

يشار للقيمة المطلقة للعدد الصحيح a بالاشارة $|a|$

القيمة المطلقة للعدد صفر هي صفر



Thinking Cap

اختبار

نشاط

مثال ٢

مثال ١

جمع الأعداد الصحيحة

الدرس الرابع

جمع الأعداد الصحيحة

توضيح مفهوم الجمع

١ ربح تاجر في اليوم الأول (٥٠) ديناراً ، و ربح في اليوم الثاني (٢٠) ديناراً ، فما نتيجة عملياته التجارية في اليومين المذكورين

نغير بالأعداد الصحيحة عن عمليات كل يوم .. كما يلي

٥٠+ ربح في اليوم الأول (٥٠) ديناراً

٢٠+ ربح في اليوم الثاني (٢٠) ديناراً

أي أن ربحه في اليومين المذكورين $٧٠+ = (٢٠+) + (٥٠+)$



اختبار

نشاط

مثال ٢

مثال ١

الدرس الخامس

خصائص عملية جمع الأعداد الصحيحة

النظير الجمعي والعنصر المحايد

عنصر المحايد لعملية الجمع هو العنصر الذي لا يؤثر على أي عدد يتم جمعه إليه (أو طرحه)

(٤)

أن العدد صفر يحقق ذلك فإنا نقول أن الصفر هو العنصر المحايد في عملية الجمع

ذلك

$$(٢-) = ٠ + (٢-)$$

$$٤ = ٠ + ٤$$

$$(٨-) = ٠ + (٨-)$$

$$١٥ = ٠ + ١٥$$

ما النظير الجمعي : إذا كان أ عددا صحيحا فإنه يوجد عدد صحيح آخر هو -أ بحيث $أ + (-أ) = ٠$ يسمى -أ في هذه الحالة بالنظير الجمعي للعدد أ كما يسمى أ بالنظير الجمعي للعدد -أ

ذلك

ومن ذلك نقول أن (-٤) هو النظير الجمعي للعدد (٤)

$$٠ = (٤-) + ٤$$

ومن ذلك نقول أن (١٧) هو النظير الجمعي للعدد (-١٧)

$$٠ = ١٧ + (-١٧)$$



الدرس السادس

طرح الاعداد الصحيحة

طرح الأعداد الصحيحة

تعريف عملية الطرح

نعرف عملية طرح عددين صحيحين أ ، ب بأنها عملية جمع أحدهما للنظير الجمعي للآخر

$$\text{وذلك لأنه يمكننا القول بأن } أ - ب = أ + (-ب)$$

$$أ - ب = أ + (-ب)$$

لاحظ العمليات التالية

٢	=	(٥ -) + ٧	=	٥ - ٧
٢ -	=	(٧ -) + ٥	=	٧ - ٥

اختبار

نشاط

مثال ٢

مثال ١

خصائص

Announcing...

MATHEMATICA

الدرس السابع ضرب الاعداد الصحيحة

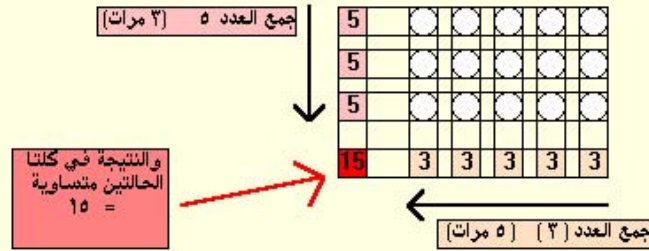
الدرس السابع

الدرس السابع - ضرب الأعداد الصحيحة

عرف عملية ضرب الأعداد الصحيحة على أنها عملية جمع متكرر للعدد المضروب بمقدار العدد مضروب به - والعكس صحيح -

لما نقول (3×5) فهذا يعني أننا نجمع العدد (5) إلى نفسه (3) مرات أو نجمع العدد (3) إلى (5) مرات

وباستخدام كرات العد لتمثيل العملية (3×5)



خصائص ملاحظات مثال نشاط اختبار

الدرس الثامن قسمة الاعداد الصحيحة

الدرس الثامن

درس الثامن - قسمة الأعداد الصحيحة

مخرجة القسمة هي مخرجة توزيع العدد الأول بنسبة ثابتة بعدد مرات مساوية للعدد الثاني المقسوم عليه

من المعلوم أنه ينتج عن كل عملية ضرب عملينا قسمة وبذلك تكون عملية القسمة هي عملية معاكسة لعملية الضرب

الأمثلة التالية توضح هذه الفكرة

أمثلة توضيحية



$2 = 4 \div 8$	$4 = 2 \div 8$	ينتج عنها	$8 = 2 \times 4$
$2 = 4 - \div 8 -$	$4 - = 2 \div 8 -$	ينتج عنها	$8 - = 2 \times 4 -$
$2 - = 4 - \div 8$	$4 - = 2 - \div 8$	ينتج عنها	$8 = 2 - \times 4 -$

ومن ذلك نلاحظ

نجد قسمة عددين صحيحين لهما نفس الإشارة هو عدد موجب دائما

نجد قسمة عددين صحيحين أحدهما سالب والآخر موجب هو عدد سالب دائما

خصائص مثال ١ مثال ٢ نشاط اختبار



(20)

An Najah National University
Faculty of Graduate Studies

**Effect of Using Visual Basic Language on Seventh Graders’
Temporary and Delayed Achievement and Their Motivation for
Achievement in Mathematics Learning**

By
Rana H. Darwish Abu Za’rour

Supervisor:
Dr. Shehadeh M. Abdo

Assistant Supervisor:
Dr. Mohammed Najib Asa’ad

**Submitted in Partial Fulfillment of the Requirements for the Degree of Master in
Educational Science in Methods of Teaching Mathe, at An-Najah National
University, Nablus, Palestine.**

2003

**Effect of Using Visual Basic Language on Seventh Graders’
Temporary and Delayed Achievement and Their Motivation for
Achievement in Mathematics Learning**

By

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Supervisor

Dr. Shehadeh M. Abdo

Assistant Supervisor

Dr. Mohammed Najib Asa’ad

Abstract

This study sought to identify the effect of using visual basic language on both temporary and delayed achievement of seventh grade students and motivation for their achievement in learning mathematics. To this end, the researcher investigated the effect of using a computer visual basic program, as a teaching method, on seventh graders’ achievement in mathematics. The researcher also examined the impact of the computer visual basic language, as a teaching technique on motivation for achievement in “Whole Numbers”, a unit in the seventh graders’ mathematics textbook, and their attitude towards learning mathematics.

To test the study hypotheses and answer the questions of the study, the researcher administered a questionnaire to a random sample consisting of 140 seventh grade male and female students at government schools in Nablus District. The subjects were distributed among four sections in four different schools, two schools for boys and two schools for girls. Two sections, one for boys and one for girls, randomly chosen and both represented the two experimental sections. They were taught by using a computerized visual basic program as a teaching method. The subjects were 80 students of both sexes: 42 males and 38 females. The other two

sections were a comparison group. They were taught by using traditional classroom instruction method. The comparison (control) group included 60 students of both sexes: 30 males and 30 females.

The researcher prepared a prior knowledge test to check the equivalence of the two groups. Juries tested the reliability of the test. Its validity was calculated by using Gauder Richardson equation (20) and its value was 0.89. The researcher prepared a scientific achievement test on the whole numbers. Its reliability was checked by a jury while its validity was calculated by using Test and R-Test. Using Pearson's correlation coefficient to calculate it, its value was found to be 0.86.

The motivation for achievement scale was developed to measure the students' motivation for achievement. Equivalence of the two groups was checked by using One Way Analysis of Variance; its validity was calculated by using Cronback Alpha. Its value was 0.93.

The prior test was adopted to be used in the seventh grade in mathematics discipline in the academic year 2003/2004 to check the equivalence of the two groups: experimental and comparison. Then, the temporary test was administered to the two study groups directly after completion of the study of the whole numbers, the second

unit in the mathematics textbook of the seventh grade, to find out the effect of using the computerized visual basic language program on students' direct achievement . Two weeks after administration of the temporary test and in order to identify the effectiveness of using the visual basic language as a teaching method in students' retention of some concepts pertinent to the whole numbers, the delayed test was administered to the students. It was the temporary test itself.

To test the study hypotheses and analyze the results, the researcher used the One Way Analysis of Variance and the Two – Way Analysis of Variance (Correlation Design 2x2).

Findings

- There were no statistically significant differences at $\alpha = 0.01$ among the averages of seventh graders' achievement which may be attributed to method of instruction. Computed F value was 23.076 whereas its Tabulated value was 6.63. That is, the first null hypothesis was rejected and an alternative hypothesis was accepted. The difference was found to be in favor of the experimental group with whom the computerized program was used.
- It was found that there were statistically significant differences at $\alpha = 0.01$ among the averages of the seventh graders' scientific achievement which might be attributed to the sex variable. The Computed F value was 36.625 while its Tabulated value was 6.63. The null hypothesis was rejected; an alternative hypothesis was accepted in favor of females' averages.
- There were statistically significant differences at $\alpha = 0.01$ in academic achievement in favor of the delayed test. Computed F value was bigger than its Tabulated value, meaning rejection of the third null hypothesis and acceptance of the alternative null hypothesis.
- No statistically significant differences were found at $\alpha = 0.01$ among averages of the seventh graders' academic achievement which might be attributed to interaction between method of instruction and sex. Computed F value was less than its Tabulated value: 4.910 against 6.63.
- There were statistically significant differences between the averages of temporary motivation for achievement and the delayed achievement of the seventh graders due to method of instruction. The Computed F value in the temporary & delayed motivation for achievement was bigger than the Tabulated value (6.63). This means a rejection of the fifth null hypothesis and an acceptance of the alternative hypothesis. The difference was in favor of the experimental group.

- There were statistically significant differences at $\alpha=0.01$ among the temporary and delayed motivation for seventh graders' achievement due to sex. The Computed F value in the temporary and delayed motivation for achievement was bigger than its Tabulated value (6.63). This means a rejection of the sixth null hypothesis and an acceptance of the alternative hypothesis. The difference was in favor of males in the motivation of both temporary and delayed achievement.
- There were no statistically significant differences at $\alpha=0.01$ in motivation for achievement of both the control and experimental groups. The Computed F value equaled its tabulated value. This means a rejection of the seventh null hypothesis and an acceptance of the alternative null hypothesis.
- No statistically significant differences were found among the averages of motivation for temporary and delayed achievement of the seventh graders in mathematics due to the interaction between method of instruction and sex. The Computed F. Value was less than its Tabulated value (6.63).
- In the light of these findings, the researcher recommends that mathematics teachers use computerized educational programs in teaching. The researcher also recommends that further research be conducted on effect of using computerized programs in teaching other scientific disciplines. She recommends also the establishment of a committee to plan and design computerized educational packages in all fields of knowledge such as education and science and not to depend on ready-made programs. She also recommends strengthening the relationship between mathematicians and computer engineers to develop computerized educational programs in mathematics due to their scarcity and lack of Comprehensiveness.