

مادة الرياضيات (السنة الأولى من التعليم المتوسط)

تغيير التصور حول الضرب:

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$$15.6 + x = 74.2 \quad :$$

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$$\frac{4285}{1000} \quad , \quad \frac{27}{100} \quad , \quad \frac{3}{10} \quad : \quad :$$

$$\frac{3}{25} \quad , \quad \frac{1}{2} \quad :$$

$$\frac{12}{100} \quad , \quad \frac{5}{10}$$

.1 :

:

$$\cdots \quad , \quad \frac{1}{100000} \quad , \quad \frac{1}{10000} \quad , \quad \frac{1}{1000} \quad , \quad \frac{1}{100} \quad , \quad \frac{1}{10}$$

. . . , , , :

$$\frac{1}{10} = 10 \times \frac{1}{100} \quad , \quad 1 = 10 \times \frac{1}{10} \quad :$$

$$\dots , \quad \frac{1}{100} = 10 \times \frac{1}{1000}$$

10

.1

...

⋮

.

⋮

$$\frac{34578}{1000}$$

$$\frac{34578}{1000} = \frac{30000 + 4000 + 500 + 70 + 8}{1000}$$

$$\frac{34578}{1000} = \frac{30000}{1000} + \frac{4000}{1000} + \frac{500}{1000} + \frac{70}{1000} + \frac{8}{1000}$$

$$= 30 + 4 + \frac{5}{10} + \frac{70}{100} + \frac{8}{1000}$$

ملاحظة: نتأكد من التعميم.

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$$\frac{34578}{1000} : \quad \mathbf{34.578}$$

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34.578

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$$\frac{535}{10} = \mathbf{53.5} \qquad \frac{52}{1000} = \mathbf{0.052} :$$

: **34.075** .

$$\mathbf{34.075} = \mathbf{34} + \frac{0}{10} + \frac{7}{100} + \frac{5}{1000}$$

$$\mathbf{34.075} = \frac{34000}{1000} + \frac{0}{1000} + \frac{7}{1000} + \frac{5}{1000}$$

$$34.075 = \frac{34000 + 0 + 70 + 5}{1000} = \frac{34075}{1000}$$

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$$= 2.345 + 6.8 + 0.42$$

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$$= \frac{2345}{1000} + \frac{6800}{1000} + \frac{420}{1000}$$

$$= \frac{2345 + 6800 + 420}{1000} = 9.565$$

$$= 9.566$$

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$$\begin{array}{r} 2.345 \\ + 6.800 \\ + 0.420 \\ \hline = 9.565 \end{array}$$

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$$35.4 \quad 24.72$$

$$= 35.4 - 24.72 \quad :$$

$$= \frac{354}{10} - \frac{2472}{100}$$

100

$$= \frac{3540}{100} - \frac{2472}{100}$$

$$= \frac{3540 - 2472}{100}$$

$$= \frac{1068}{100}$$

$$= \mathbf{10.68}$$

.

.

35.40

- 24.72

$$\hline = \mathbf{10.68}$$

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$$6.85 \quad 3.7 :$$

$$= 6.85 \times 3.7 :$$

$$\frac{685}{100} \times \frac{37}{10} = \frac{25345}{1000}$$

$$= \frac{25345}{1000}$$

$$= 25.345$$

:

$$\begin{array}{r}
 6.85 \\
 \times 3.7 \\
 \hline
 4795 \\
 2055 \\
 \hline
 25.345
 \end{array}$$

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$$0.857 \times 10 = 8.57$$

$$0.857 \times 100 = 85.7$$

$$0.857 \times 1000 = 857$$

..... 1000 100 10

...

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$$345 \times 0.1 = 34.5$$

$$345 \times 0.01 = 3.45$$

$$345 \times 0.001 = 0.345$$

0.001 0.01 0.1

...

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20.3×0.05	1.015	100.15	1000.15	0.01015
0.006×28	0.0168	1.68	1.248	0.168
0.9×72	0.697	64.8	65.7	7.28
0.04×125	0.05	5	0.5	500
241×5.7	133.7	1373.7	13773.7	256.7

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-1

-2

-3

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388×1.03	38.04	385.24	399.64	3399.64	
60.32×0.83	50.0656	70.0656	4.8656	48.966	

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- 1

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-2

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1

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. 0.67

15.4

$$= 15.4 : 0.67$$

$$= \frac{154}{10} : \frac{67}{100}$$

$$= \frac{154}{10} \times \frac{100}{67}$$

$$= \frac{1540}{670} .$$

.



$$\frac{134}{335}$$

$$3.35$$

$$1.34$$

$$: \quad \frac{2}{5}$$

$$\frac{134}{335} = \frac{2}{5} \times \frac{67}{67}$$

$$\frac{2}{5} =$$

$$0.4 : \quad \frac{4}{10} :$$



$$: \quad -$$

$$343 : 10 = 34.3$$

$$343 : 100 = 3.43$$

$$343 : 1000 = 0.343$$

... 1000 100 10

...

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$$0.283 : 0.1 = 2.83$$

$$0.283 : 0.01 = 28.3$$

$$0.283 : 0.001 = 283$$

.... 0.001 0.01 0.1 :

...

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:
 :

: :

. **58.25 cm**

1 cm

. **0.01** . **9** **58.25 cm**

5825 cm

647 : . **9**

. **6.47 cm** **647 cm**

$$9 \times 6.48 > 58.25 \geq 6.47 \times 9$$

:
 :

. **0.001** **0.01** **0.1**

.

⋮

.

.

⋮

0.01

6.23

55.8341 :

. 6.23

5583.41



$$\cdot \quad \mathbf{0.5} \qquad \qquad \mathbf{0.5} \qquad \qquad -$$

$$\mathbf{0.5} = \frac{5}{10} \qquad :$$

$$\mathbf{0.5} = \frac{1}{2}$$

$$\cdot \quad \mathbf{2} \qquad \qquad \frac{1}{2} \qquad \qquad \mathbf{0.5}$$

$$\frac{34}{2} = \mathbf{0.5} \times 34 \quad : \quad \text{Yellow box with a horizontal line through the center.}$$

$$\mathbf{17} = \mathbf{0.5} \times 34$$

$$\cdot \quad \mathbf{2} \qquad \qquad \frac{1}{2} \qquad \qquad \mathbf{0.5}$$

$$\mathbf{2} \times \mathbf{74} = \mathbf{0.5} : \mathbf{74} \quad : \quad \text{Yellow box with a horizontal line through the center.}$$

$$\mathbf{148} = \mathbf{0.5} : \mathbf{74}$$

0.25

0.25

-

$$\mathbf{0.25} = \frac{25}{100} \quad :$$

$$\mathbf{0.25} = \frac{1}{4}$$

. 4

$$\frac{1}{4}$$

0.25

: 


$$\mathbf{48 \times 0.25 = \frac{48}{4}}$$

$$\mathbf{12 = \frac{48}{4}}$$

. 4

$$\frac{1}{4}$$

. 0.25

$$\mathbf{36 : 0.25 = 36 \times 4 \quad : $$



$$\mathbf{144 = 36 \times 4}$$

0.125

0.125

-

$$\mathbf{0.125} = \frac{125}{1000} \quad :$$

$$\frac{1}{8} = \frac{125}{1000}$$

. **8**

$$\frac{1}{8}$$

0.125

: 

$$\mathbf{136} \times \mathbf{0.125} = \frac{136}{8}$$

$$\mathbf{17} = \frac{136}{8}$$

. **8**

$$\frac{1}{8}$$

0.125

$$\mathbf{75} : \mathbf{0.125} = \mathbf{75} \times \mathbf{8} \quad : $$

$$\mathbf{600} = \mathbf{75} : \mathbf{0.125}$$

0.75

0.75

–

$$\mathbf{0.75} = \frac{75}{100} \quad :$$

$$\mathbf{0.75} = \frac{3}{4}$$

$$\cdot \frac{3}{4} \quad \mathbf{0.75}$$

$$\mathbf{76 \times 0.75} = \mathbf{76 \times \frac{3}{4}} \quad : \text{yellow box}$$

$$\mathbf{57} = \mathbf{76 \times \frac{3}{4}}$$

$$\frac{4}{3} \quad \frac{3}{4} \quad \mathbf{0.75}$$

$$\mathbf{117 : 0.75} = \mathbf{117 \times \frac{4}{3}} \quad : \text{yellow box}$$

$$\mathbf{156} = \mathbf{117 \times \frac{4}{3}}$$



: _____ -

$$0.25 \times 38$$

$$0.5 \times 93$$

$$0.5 \times 86 \quad -1$$

$$0.25 \times 31$$

$$0.25 \times 42$$

$$250 \times 3.6$$

$$25 \times 0.48$$

$$0.75 \times 32 \quad -2$$

$$611 \times 0.05$$

$$2.5 \times 0.65$$

$$0.5 : 85$$

$$0.5 : 53$$

$$0.5 : 75 \quad -3$$

$$0.05 : 18$$

$$7.5 : 48$$

$$0.75 : 69$$

$$0.75 : 60 \quad -4$$

$$2.5 : 180$$

$$0.25 : 19$$

$$0.125 : 34$$

$$0.125 : 11$$

$$2.5 : 5.48 \quad -5$$

1.25 : 8000

12.5 : 4500

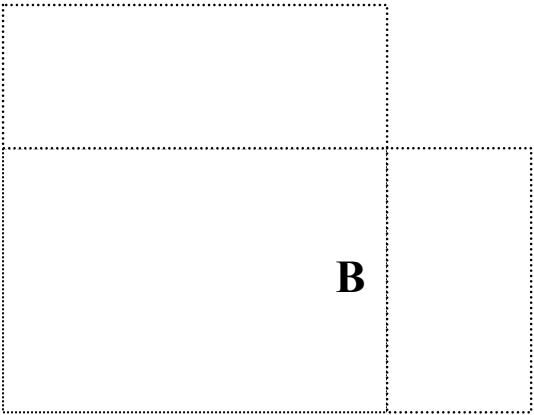
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$\frac{5}{1000}$ $\frac{375}{1000}$ $\frac{125}{100}$ $\frac{36}{100}$ $\frac{6}{25}$ $\frac{5}{10}$ $\frac{1}{4}$ $\frac{4}{5}$

:

. 0.28 3.14 47.25 0.625 1.2 0.75 0.25 0.4



A

C

B

4 cm 6 cm

-1

.

2 cm

-2

.

.

.

2 cm

-3

:

-4

$A \times B$: A C

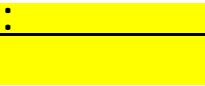
..... :

A $A \times B$: B C -

..... :

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-5



4 cm 6 cm

.

-1

. 3 cm

2 cm

-2

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-

:

-3

A

C

-

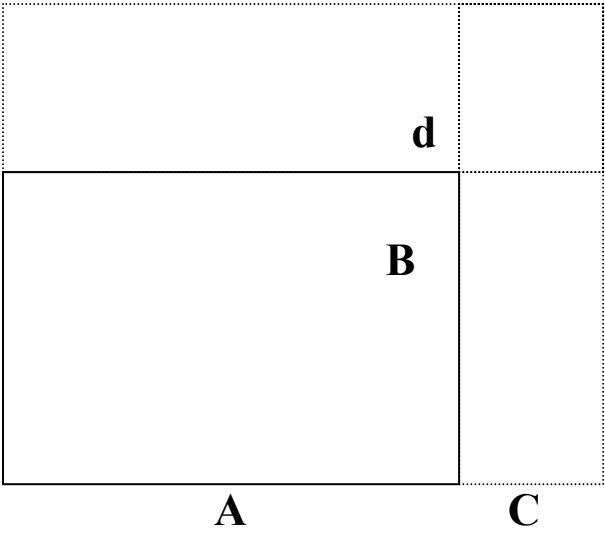
A × B

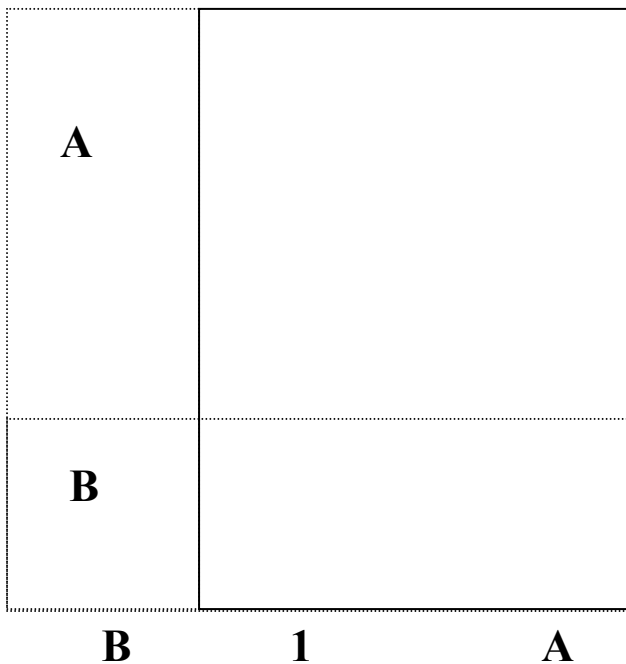
A

D

.....:

-4

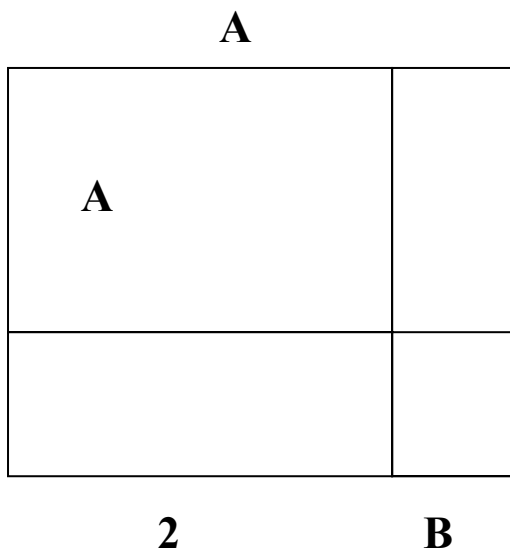




:

(1)

$$(A + B)^2 = A^2 + 2AB + B^2$$



B

A × B :

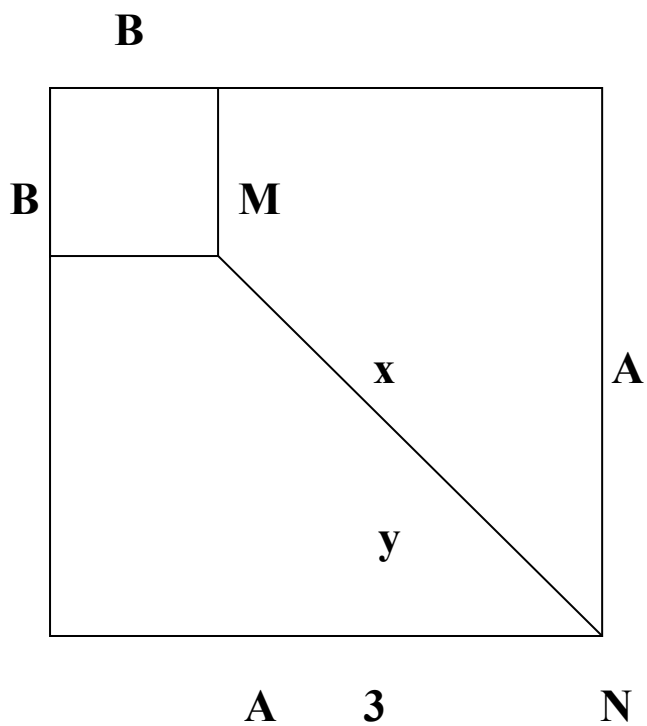
B²

-3

$$(A + B)^2 = A^2 + 2AB + B^2$$

2

-4



:

A -1

. B

.3

y , x :

MN

B , A : -2

B , A : -3

.

3 : -4

$$A^2 - B^2 = (A + B)(A - B)$$