





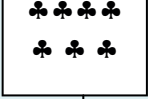
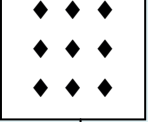


Nom de l'élève :

Prénom :



Temps :

I1



					<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>		<input type="text"/>

I2


1	2	...	1	2	...	4	5	...	...	8	...	...
<input type="text"/>	<input type="text"/>	<input type="text"/>	...	16	17	...	...	20	21	...	23	...

I3


1 ... 2	4 ... 3	3 ... 3	1 ... 2	8 ... 7	19 ... 20	16 ... 16	5 ... 15
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

I4




$3+2=...$	$10+20=...$	$\begin{array}{r} 5 \\ + 3 \\ \hline \dots \end{array}$	$\begin{array}{r} 7 \\ + 9 \\ \hline \dots \end{array}$	$\begin{array}{r} 28 \\ + 71 \\ \hline \dots \end{array}$
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I5



$5-2=...$	$70-30=...$	$\begin{array}{r} 9 \\ - 7 \\ \hline \dots \end{array}$	$\begin{array}{r} 13 \\ - 3 \\ \hline \dots \end{array}$	$\begin{array}{r} 86 \\ - 54 \\ \hline \dots \end{array}$
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I6



$2 \times 2 = ...$	$3 \times 2 = ...$	$2 \times 7 =$	$8 = 2 \times ...$	$12 = 2 \times ...$
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# ÉVALUATION NON-VERBALE EN MATHÉMATIQUES POUR ÉLÈVES ALLOPHONES



Évaluation diagnostique (école/collège) – CE1/CE2

Nom de l'élève :


Prénom :

Temps :


II1

  $5 < 7$   $4 > 2$   $3 = 3$   $2 \neq 1$    $7 \dots 10$   $19 \dots 9$   $95 \dots 57$   $32 \dots 32$   $501 \dots 498$  . /5


II2

 
$$\begin{array}{r} 15 \\ + 4 \\ \hline \dots \end{array}$$
 
$$\begin{array}{r} 37 \\ + 12 \\ \hline \dots \end{array}$$
 
$$\begin{array}{r} 88 \\ + 2 \\ \hline \dots \end{array}$$
 
$$\begin{array}{r} 46 \\ + 87 \\ \hline \dots \end{array}$$
 
$$\begin{array}{r} 500 \\ + 79 \\ \hline \dots \end{array}$$
 . /5



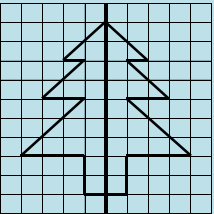
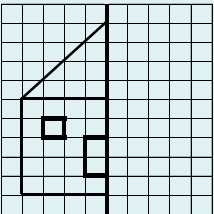
II3

 
$$\begin{array}{r} 16 \\ - 6 \\ \hline \dots \end{array}$$
 
$$\begin{array}{r} 35 \\ - 7 \\ \hline \dots \end{array}$$
 
$$\begin{array}{r} 27 \\ - 19 \\ \hline \dots \end{array}$$
 
$$\begin{array}{r} 398 \\ - 58 \\ \hline \dots \end{array}$$
 
$$\begin{array}{r} 127 \\ - 69 \\ \hline \dots \end{array}$$
 . /5



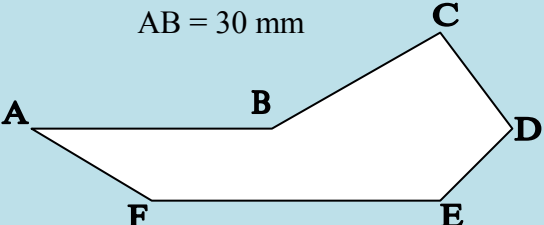
II4

 
$$\begin{array}{r} 8 \\ \times 5 \\ \hline \dots \end{array}$$
 
$$\begin{array}{r} 7 \\ \times 9 \\ \hline \dots \end{array}$$
 
$$\begin{array}{r} 63 \\ \times 4 \\ \hline \dots \end{array}$$
 
$$\begin{array}{r} 78 \\ \times 96 \\ \hline \dots \\ \hline \dots \end{array}$$
 
$$\begin{array}{r} 123 \\ \times 45 \\ \hline \dots \\ \hline \dots \end{array}$$
 . /5



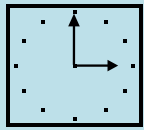
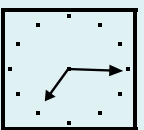
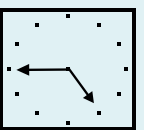
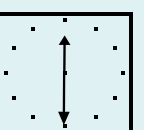
II5

    . /5

II6

    $AB = 30 \text{ mm}$   $BC = \dots \text{ mm}$   $CD = \dots \text{ mm}$   $DE = \dots \text{ mm}$   $EF = \dots \text{ mm}$   $FA = \dots \text{ mm}$  . /5

II7

    $3\text{h}00 \text{ ou } 15\text{h}00$    $\dots\text{h}\dots \text{ ou } \dots\text{h}\dots$    $\dots\text{h}\dots \text{ ou } \dots\text{h}\dots$    $\dots \text{ h } \dots$  . /5

Nom de l'élève :

Prénom :

Temps :

## III1



$1 > 0,1$      $20,01 < 20,10$



$1 \dots 0,9$      $7,9 \dots 8,1$      $0,1 \dots 1$      $0,2 \dots 0,09$      $9,5 \dots 9,50$

./5

## III2



$17 + 0,77 = \dots$

$50,05 + 5,5 = \dots$

$264 + 73,6 + 18,95 = \dots$

$375 + 21,6 = \dots$

$48,7 + 89,6 = \dots$

./5

## III3



$37,8 - 5 = \dots$

$49 - 6,5 = \dots$

$872 - 86,14 = \dots$

$38,76 - 32,14 = \dots$

$349,6 - 27,85 = \dots$

./5

## III4



$5,62 \times 1000 = \dots$

$378,2 \times 0,01 = \dots$

$79,1 \times 3,52 = \dots$

$2,5 \times 480 = \dots$

$176 \times 0,340 = \dots$

./5

## III5



$275 : 100 = \dots$

$72 : 8 = \dots$

$3230 : 68 = \dots$

$2742 : 3 = \dots$

$185 : 37 = \dots$

./5

## III6



A(2,3)

5			C		
4	E				B
3		A			
2				D	
1	F				
	1	2	3	4	5



B(.... , ....)    C(.... ,....)

D(.... , ....)    E(.... , ....)

F(.... , ....)

./5

## III7



$1 \text{ h} = \dots \text{ mn}$      $1 \text{ mn} = \dots \text{ s}$

$1 \text{ km} = \dots \text{ m}$      $1 \text{ m} = \dots \text{ cm}$      $1 \text{ cm} = \dots \text{ mm}$      $50000 \text{ m} = \dots \text{ km}$

$1 \text{ t} = \dots \text{ kg}$      $1 \text{ kg} = \dots \text{ g}$      $1 \text{ g} = \dots \text{ mg}$      $3000 \text{ g} = \dots \text{ kg}$

./5

## ÉVALUATION NON-VERBALE EN MATHÉMATIQUES POUR ÉLÈVES ALLOPHONES

Évaluation diagnostique (école/collège) – 6<sup>e</sup>/5<sup>e</sup>

Nom de l'élève :

Prénom :

Temps :

## IV1



$$\frac{25}{100} = 0,25$$



$$\frac{93}{100} = \dots\dots$$

$$\frac{7}{10} = \dots\dots$$

$$\frac{250}{\dots\dots} = 2,5$$

$$\frac{\dots\dots}{100} = 3,18$$

$$\frac{12}{10} = \dots\dots$$

./5

## IV2



$$\frac{18}{30} = \frac{\cancel{2} \times \cancel{3} \times 3}{\cancel{2} \times \cancel{3} \times 5} = \frac{3}{5}$$



$$\frac{2}{6} = \dots\dots = \dots\dots$$

$$\frac{50}{40} = \dots\dots = \dots\dots$$

$$\frac{20}{28} = \dots\dots = \dots\dots$$

$$\frac{42}{36} = \dots\dots = \dots\dots$$

$$\frac{810}{720} = \dots\dots = \dots\dots$$

./5

## IV3



$$\frac{3}{2} \times \frac{5}{2} = \frac{3 \times 5}{2 \times 2} = \frac{15}{4}$$



$$\frac{1}{5} \times \frac{5}{1} = \dots\dots = \dots\dots$$

$$\frac{3}{2} \times \frac{2}{3} = \dots\dots = \dots\dots$$

$$\frac{7}{3} \times \frac{2}{5} = \dots\dots = \dots\dots$$

$$\frac{15}{30} \times \frac{8}{2} = \dots\dots = \dots\dots$$

$$\frac{72}{35} \times \frac{7}{8} = \dots\dots = \dots\dots$$

./5

## IV4



$$\frac{3}{2} + \frac{5}{2} = \frac{8}{2} = 4$$



$$\frac{3}{4} + \frac{9}{4} = \dots\dots = \dots\dots$$

$$\frac{2}{5} + \frac{8}{5} = \dots\dots = \dots\dots$$

$$\frac{7}{5} - \frac{2}{5} = \frac{5}{5} = 1$$

$$\frac{7}{3} - \frac{1}{3} = \dots\dots = \dots\dots$$

$$\frac{17}{7} - \frac{3}{7} = \dots\dots = \dots\dots$$

$$\frac{3}{2} - \frac{1}{2} = \dots\dots = \dots\dots$$

./5

## IV5



$$\frac{7,2}{9} = 0,8$$



$$\frac{3,5}{5} = \dots\dots$$

$$\frac{72}{1,2} = \dots\dots$$

$$\frac{53,2}{1,9} = \dots\dots$$

$$\frac{10,35}{2,3} = \dots\dots$$

$$\frac{0,1}{0,025} = \dots\dots$$

./5

## IV6



$$\frac{75}{100} = 75\%$$



$$\frac{37}{100} = \dots\dots\%$$

$$\frac{5}{10} = \dots\dots\%$$

$$\frac{1}{4} = \dots\dots\%$$

$$\frac{8,74}{38} = \dots\dots\%$$

$$\frac{0,325}{10} = \dots\dots\%$$

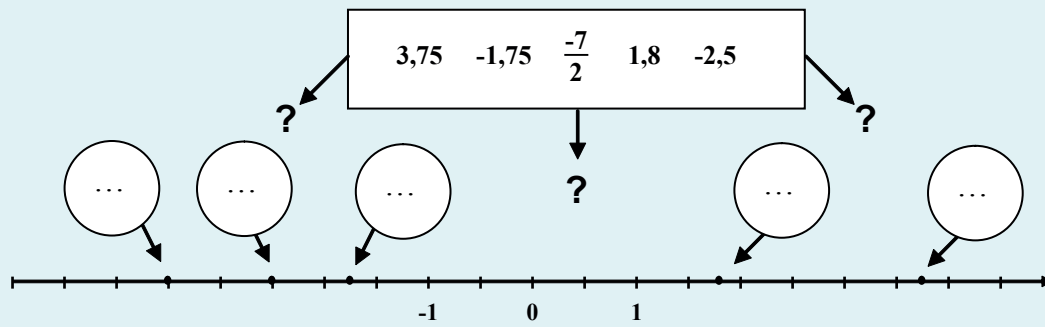
./5

Nom de l'élève :

Prénom :

Temps :

IV7



./5

IV8



$12,8 + \dots = 53,1$

$\dots + 25,6 = 33,51$

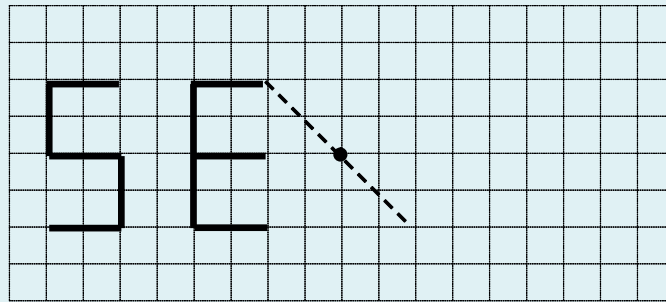
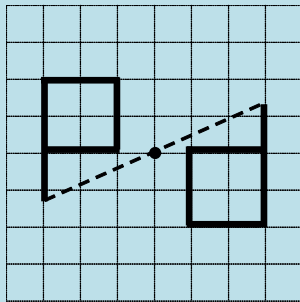
$0,25 + \dots = 15,75$

$3,8 \times \dots = 15,2$

$23 \times \dots = 471,5$

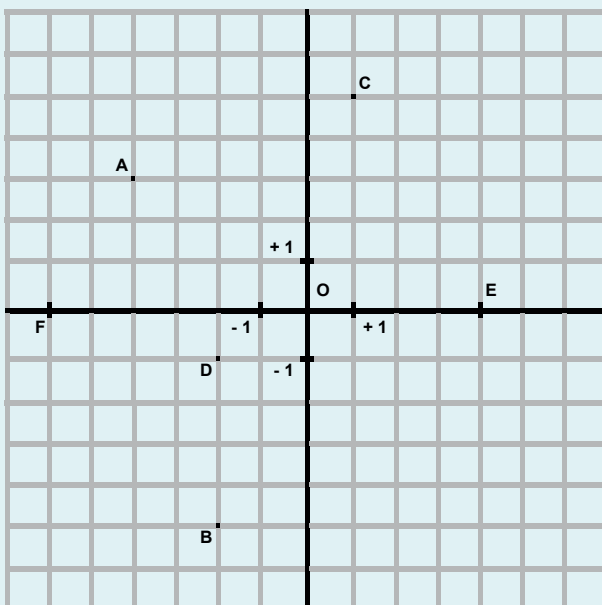
./5

IV9



./5

IV10

 $A(-4,3)$  $B(\dots, \dots)$  $C(\dots, \dots)$  $D(\dots, \dots)$  $E(\dots, \dots)$  $F(\dots, \dots)$ 

./5

Nom de l'élève :

Prénom :

Temps :

V1



2	$x$
3	$\frac{3}{2}x$



3	1	...	90	...	$x$
1	...	3	...	31	...

./5

V2



$a = 2,5 \quad b = 4 \quad c = 0,25$



$a - bc = \dots$        $a + (b + c) = \dots$

$a + bc = 2,5 + (4 \times 0,25) = 2,5 + 1 = 3,5$

$a + \frac{b}{c} = \dots$

$\frac{a - b}{c} = \dots$

$\frac{bc - a}{ab} = \dots$

./5

V3



$-1,8 \times (-0,2) = \dots$

$-0,5 \times 1,02 = \dots$

$-10,2 \times 0,05 = \dots$

$1,8 \times (-0,2) \times 0,05 \times (-10,2) = \dots$

$0,05 \times (-10,2) \times 10,2 \times 0,05 = \dots$

./5

V4



$\frac{a}{c} + \frac{b}{c} = \frac{a+b}{c}$



$\frac{5,2}{4} + \frac{0,8}{4} = \dots$

$\frac{-3,3}{0,8} + \frac{2,1}{0,8} = \dots$

$\frac{a}{b} + \frac{c}{d} = \frac{ad + cb}{bd}$

$\frac{-10}{3} + \frac{7}{2} = \dots$

$\frac{3}{2} - \frac{12,5}{5} = \dots$

$\frac{-2,2}{0,9} - \frac{14}{9} = \dots$

./5

V5



$250 \times 10^{-1} = 0,25 \times 10^2 = 25$



$35 \times 10^{-1} = \dots$

$280 \times 10^{-2} = \dots$

$16 \times 10^{-3} = \dots$

$0,52 \times 10^{-2} = \dots$

$0,01 \times 10^3 = \dots$

./5

V6



$\frac{1}{10} = 10^{-1} \quad \frac{a^2}{a^5} = \frac{1}{a^3}$



$10^{-1} \times 10^2 = \dots$

$\frac{1}{10^3} = \dots$

$(-1)^3 = \dots$

$a^2 \times a^3 = a^5 \quad (ab)^2 = a^2 b^2$

$3 \times 3^2 = \dots = \dots$

$(-2)^2 \times \frac{2^2}{2^4} = \dots$

./5

Nom de l'élève :

Prénom :

Temps :

V7



$$5x + y - 2x - 3y = 3x - 2y$$

$$(a+b)(c+d) = ac + ad + bc + bd$$

$$X^3 + 2X = X(X^2 + 2)$$



$$-6 + 3a - b + 8 - 4a + 2b = \dots\dots$$

$$(3x+1)(x+2) = \dots\dots$$

$$2A^2 - 4A = \dots\dots$$

$$2(A+5)(A-1) = \dots\dots$$

$$6x + 3x^2 = \dots\dots$$

./5

V8



$$2x - 6 = 0 \Rightarrow 2x = 6 \Rightarrow x = 3$$

$$-3a + 1 < 4 \Rightarrow -3a < 3E \Rightarrow a > 1$$



$$-2a + 3 = 1 \Rightarrow a = \dots\dots$$

$$-5 = 3A + 10 \Rightarrow A = \dots\dots$$

$$5x > 10 \Rightarrow x > \dots\dots$$

$$3x - 5 = 2x + 10 \Rightarrow x = \dots\dots$$

$$12a - 7 < 13a - 8 \Rightarrow a \dots\dots$$

./5

V9



$$(a+b)(a-b) = a^2 - b^2$$

$$(a+b)^2 = a^2 + 2ab + b^2$$

$$(a-b)^2 = a^2 - 2ab + b^2$$



$$(x+2)(x-2) = \dots\dots$$

$$(3x+1)^2 = \dots\dots$$

$$(x-5)^2 = \dots\dots$$

$$(2X+3Y)^2 = \dots\dots$$

$$(3X-2Y)^2 = \dots\dots$$

./5

V10



$$(\sqrt{a})^2 = a$$

$$\sqrt{a \times b} = \sqrt{a} \times \sqrt{b}$$

$$x^2 = 9 \Rightarrow x = 3 ; x = -3$$



$$(\sqrt{5})^4 = \dots\dots$$

$$\sqrt{2} \times \sqrt{8} = \sqrt{\dots} = \dots\dots$$

$$x^2 = 0,25 \Rightarrow x = \dots\dots ; x = \dots\dots$$

$$3\sqrt{49} = \dots\dots$$

$$2\sqrt{2} \times \sqrt{50} = \dots\dots = \dots\dots$$

./5

V11



$$(x-1)(2x+4) = 0$$

$$\Rightarrow x = 1 ; x = -2$$

$$\begin{cases} x + 2y = 0 \\ x + y = 1 \end{cases}$$

$$\Rightarrow x = 2 ; y = -1$$



$$(x+1)(x-1) = 0 \Rightarrow x = \dots\dots ; x = \dots\dots$$

$$(x-5)(3x+15) = 0 \Rightarrow x = \dots\dots ; x = \dots\dots$$

$$(-2x+9)(-5x+3) = 0 \Rightarrow x = \dots\dots ; x = \dots\dots$$

$$\begin{cases} x + 5y = 10 \\ x + 2y = 4 \end{cases}$$

$$\Rightarrow x = \dots\dots ; y = \dots\dots$$

$$\begin{cases} -3x + 2y = 5 \\ x + 4y = 3 \end{cases}$$

$$\Rightarrow x = \dots\dots ; y = \dots\dots$$

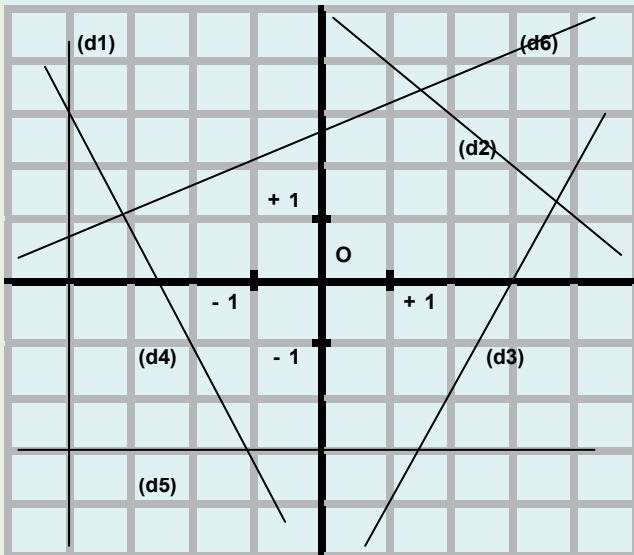
./5

Nom de l'élève :

Prénom :

Temps :

V12



$$2y = x + 5 \Rightarrow (d6)$$



$$x = -4 \Rightarrow \dots$$

$$y = -3 \Rightarrow \dots$$

$$y = -x + 5 \Rightarrow \dots$$

$$y = 2x - 6 \Rightarrow \dots$$

$$y = -2x - 5 \Rightarrow \dots$$

./5

Bertrand Lecocq - CASNAV de Lille



I1

. / 5

I2

. / 5

I3

. / 5

I4

. / 5

I5

. / 5

I6

. / 5

II1



$5 < 7$     $4 > 2$     $3 = 3$     $2 \neq 1$     $7 < 10$     $19 > 9$     $95 > 57$     $32 = 32$     $501 > 498$

./5

II2



$$\begin{array}{r} 15 \\ + 4 \\ \hline 19 \end{array}$$

$$\begin{array}{r} 37 \\ + 12 \\ \hline 49 \end{array}$$

$$\begin{array}{r} 88 \\ + 2 \\ \hline 90 \end{array}$$

$$\begin{array}{r} 46 \\ + 87 \\ \hline 133 \end{array}$$

$$\begin{array}{r} 500 \\ + 79 \\ \hline 579 \end{array}$$

./5

II3



$$\begin{array}{r} 16 \\ - 6 \\ \hline 10 \end{array}$$

$$\begin{array}{r} 35 \\ - 7 \\ \hline 28 \end{array}$$

$$\begin{array}{r} 27 \\ - 19 \\ \hline 8 \end{array}$$

$$\begin{array}{r} 398 \\ - 58 \\ \hline 340 \end{array}$$

$$\begin{array}{r} 127 \\ - 69 \\ \hline 58 \end{array}$$

./5

II4



$$\begin{array}{r} 8 \\ \times 5 \\ \hline 40 \end{array}$$

$$\begin{array}{r} 7 \\ \times 9 \\ \hline 63 \end{array}$$

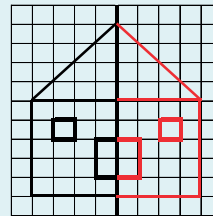
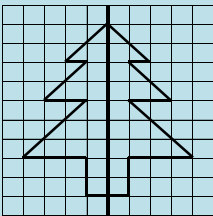
$$\begin{array}{r} 63 \\ \times 4 \\ \hline 252 \end{array}$$

$$\begin{array}{r} 78 \\ \times 96 \\ \hline 468 \\ 7020 \\ \hline 7488 \end{array}$$

$$\begin{array}{r} 123 \\ \times 45 \\ \hline 615 \\ 4920 \\ \hline 5535 \end{array}$$

./5

II5

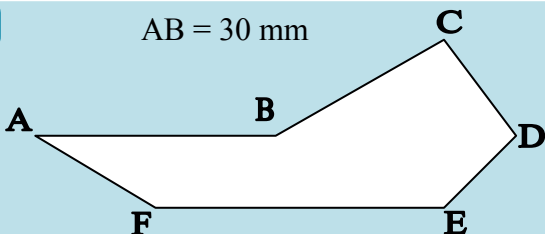


./5

II6



AB = 30 mm



BC = 24 mm

CD = 15 mm

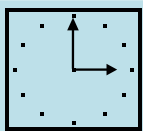
DE = 13 mm

EF = 36 mm

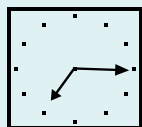
FA = 18 mm

./5

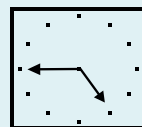
II7



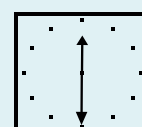
3h00 ou 15h00



7h15 ou 19h15



4h45 ou 16h45



12h30

./5

## III1



$1 > 0,1 \quad 20,01 < 20,10$



$1 > 0,9 \quad 7,9 < 8,1 \quad 0,1 < 1 \quad 0,2 > 0,09 \quad 9,5 = 9,50$

./5

## III2



$17 + 0,77 = 17,77$

$50,05 + 5,5 = 55,55$

$264 + 73,6 + 18,95 = 356,55$

$375 + 21,6 = 396,6$

$48,7 + 89,6 = 138,3$

./5

## III3



$37,8 - 5 = 32,8$

$49 - 6,5 = 42,5$

$872 - 86,14 = 785,86$

$38,76 - 32,14 = 6,62$

$349,6 - 27,85 = 321,75$

./5

## III4



$5,62 \times 1000 = 5620$

$378,2 \times 0,01 = 3,782$

$79,1 \times 3,52 = 278,432$

$2,5 \times 480 = 1200$

$176 \times 0,340 = 59,84$

./5

## III5



$275 : 100 = 2,75$

$72 : 8 = 9$

$3230 : 68 = 47,5$

$2742 : 3 = 914$

$185 : 37 = 5$

./5

## III6



A(2,3)

5			C		
4	E				B
3		A			
2				D	
1	F				
	1	2	3	4	5



B(5,4)

C(3,5)

D(4,2)

E(1,4)

F(1,1)

./5

## III7



$1 \text{ h} = 60 \text{ mn}$

$1 \text{ mn} = 60 \text{ s}$

$1 \text{ km} = 1000 \text{ m}$

$1 \text{ m} = 100 \text{ cm}$

$1 \text{ cm} = 10 \text{ mm}$

$50000 \text{ m} = 50 \text{ km}$

$1 \text{ t} = 1000 \text{ kg}$



$1 \text{ kg} = 1000 \text{ g}$

$1 \text{ g} = 1000 \text{ mg}$



$3000 \text{ g} = 3 \text{ kg}$

./5

## IV1



	$\frac{25}{100} = 0,25$		$\frac{93}{100} = 0,93$	$\frac{7}{10} = 0,7$	$\frac{250}{100} = 2,5$	$\frac{318}{100} = 3,18$	$\frac{12}{10} = 1,2$	./5
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## IV2

	$\frac{18}{30} = \frac{\cancel{2} \times \cancel{3} \times 3}{\cancel{2} \times \cancel{3} \times 5} = \frac{3}{5}$		$\frac{2}{6} = \frac{2}{2 \times 3} = \frac{1}{3}$	$\frac{50}{40} = \frac{5 \times 10}{4 \times 10} = \frac{5}{4}$	$\frac{20}{28} = \frac{4 \times 5}{4 \times 7} = \frac{5}{7}$
			$\frac{42}{36} = \frac{6 \times 7}{6 \times 6} = \frac{7}{6}$	$\frac{810}{720} = \frac{9 \times 90}{8 \times 90} = \frac{9}{8}$	



./5

## IV3

	$\frac{3}{2} \times \frac{5}{2} = \frac{3 \times 5}{2 \times 2} = \frac{15}{4}$		$\frac{1}{5} \times \frac{5}{1} = \frac{5}{5} = 1$	$\frac{3}{2} \times \frac{2}{3} = \frac{6}{6} = 1$	$\frac{7}{3} \times \frac{2}{5} = \frac{14}{15}$
			$\frac{15}{30} \times \frac{8}{2} = \frac{120}{60} = 2$	$\frac{72}{35} \times \frac{7}{8} = \frac{8 \times 9 \times 7}{5 \times 7 \times 8} = \frac{9}{5}$	



./5

## IV4



	$\frac{3}{2} + \frac{5}{2} = \frac{8}{2} = 4$		$\frac{3}{4} + \frac{9}{4} = \frac{12}{4} = 3$	$\frac{2}{5} + \frac{8}{5} = \frac{10}{5} = 2$
	$\frac{7}{5} - \frac{2}{5} = \frac{5}{5} = 1$		$\frac{7}{3} - \frac{1}{3} = \frac{6}{3} = 2$	$\frac{17}{7} - \frac{3}{7} = \frac{14}{7} = 2$
				$\frac{3}{2} - \frac{1}{2} = \frac{2}{2} = 1$

./5

## IV5

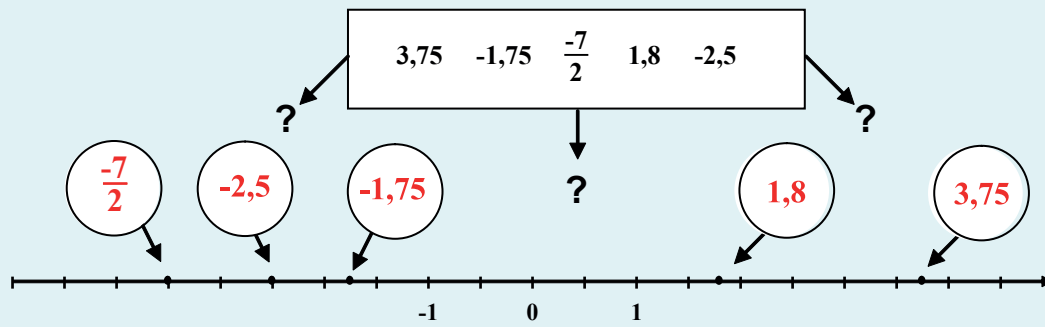
	$\frac{7,2}{9} = 0,8$		$\frac{3,5}{5} = 0,7$	$\frac{72}{1,2} = 60$	$\frac{53,2}{1,9} = 28$	$\frac{10,35}{2,3} = 4,5$	$\frac{0,1}{0,025} = 4$	./5
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## IV6

	$\frac{75}{100} = 75\%$		$\frac{37}{100} = 37\%$	$\frac{5}{10} = 50\%$	$\frac{1}{4} = 25\%$
			$\frac{8,74}{38} = 23\%$	$\frac{0,325}{10} = 3,25\%$	

./5

## IV7



./5

## IV8



$12,8 + 40,3 = 53,1$

$7,91 + 25,6 = 33,51$

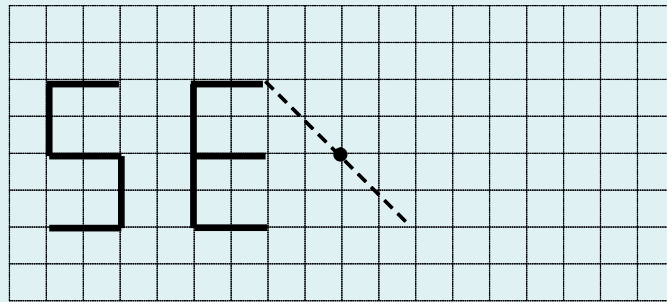
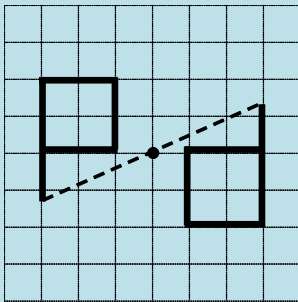
$0,25 + 15,5 = 15,75$

$3,8 \times 4 = 15,2$

$23 \times 20,5 = 471,5$

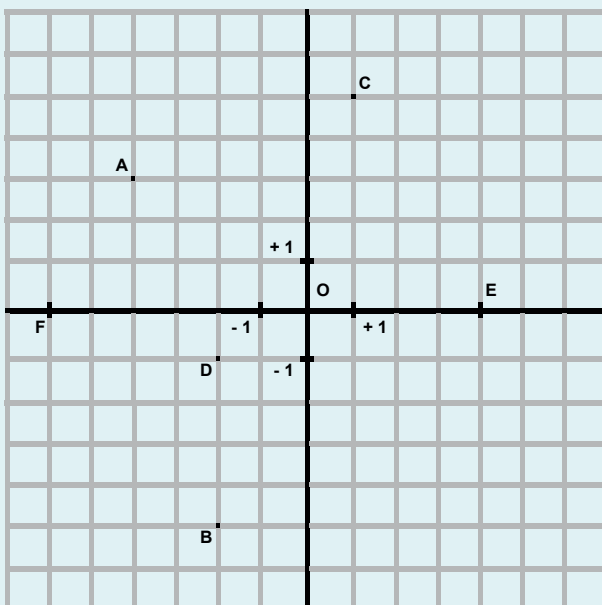
./5

## IV9



./5

## IV10

 $A(-4, 3)$  $B(-2, -5)$  $C(1, 5)$  $D(-2, -1)$  $E(4, 0)$  $F(-6, 0)$ 

./5

## V1



2	$x$
3	$\frac{3}{2}x$



3	1	9	90	93	$x$
1	$\frac{1}{3}$	3	30	31	$\frac{1}{3}x$

./5

## V2



$a = 2,5 \quad b = 4 \quad c = 0,25$



$a - bc = 1,5 \quad a + (b + c) = 10,625$

$a + bc = 2,5 + (4 \times 0,25) = 2,5 + 1 = 3,5$

$a + \frac{b}{c} = 18,5$

$\frac{a - b}{c} = -6$

$\frac{bc - a}{ab} = -0,15$

./5

## V3



$-1,8 \times (-0,2) = 0,36$

$-0,5 \times 1,02 = -0,51$

$-10,2 \times 0,05 = -0,51$

$1,8 \times (-0,2) \times 0,05 \times (-10,2) = 0,1836$

$0,05 \times (-10,2) \times 10,2 \times 0,05 = -0,2601$

./5

## V4



$\frac{a}{c} + \frac{b}{c} = \frac{a+b}{c}$



$\frac{5,2}{4} + \frac{0,8}{4} = \frac{3}{2}$

$\frac{-3,3}{0,8} + \frac{2,1}{0,8} = \frac{-3}{2}$

$\frac{a}{b} + \frac{c}{d} = \frac{ad + cb}{bd}$

$\frac{-10}{3} + \frac{7}{2} = \frac{1}{6}$

$\frac{3}{2} - \frac{12,5}{5} = -1$

$\frac{-2,2}{0,9} - \frac{14}{9} = -4$

./5

## V5



$250 \times 10^{-1} = 0,25 \times 10^2 = 25$



$35 \times 10^{-1} = 3,5$

$280 \times 10^{-2} = 2,8$

$16 \times 10^{-3} = 0,016$

$0,52 \times 10^{-2} = 0,0052$

$0,01 \times 10^3 = 10$

./5

## V6



$\frac{1}{10} = 10^{-1} \quad \frac{a^2}{a^5} = \frac{1}{a^3}$



$10^{-1} \times 10^2 = 10$

$\frac{1}{10^3} = 10^{-3} = 0,001$

$(-1)^3 = -1$



$a^2 \times a^3 = a^5 \quad (ab)^2 = a^2 b^2$

$3 \times 3^2 = 3^3 = 27$

$(-2)^2 \times \frac{2^2}{2^4} = 1$



./5

V7

 $5x + y - 2x - 3y = 3x - 2y$	 $-6 + 3a - b + 8 - 4a + 2b = -a + b + 2$
$(a+b)(c+d) = ac + ad + bc + bd$	$(3x+1)(x+2) = 3x^2 + 7x + 2$ $2(A+5)(A-1) = 2A^2 + 8A - 10$
$X^3 + 2X = X(X^2 + 2)$	$2A^2 - 4A = 2A(A - 2)$ $6x + 3x^2 = 3x(x + 2)$



./5

V8

 $2x - 6 = 0 \Rightarrow 2x = 6 \Rightarrow x = 3$	 $-2a + 3 = 1 \Rightarrow a = 1$	$3x - 5 = 2x + 10 \Rightarrow x = 15$
$-3a + 1 < 4 \Rightarrow -3a < 3E \Rightarrow a > 1$	$-5 = 3A + 10 \Rightarrow A = -5$	
	$5x > 10 \Rightarrow x > 2$	$12a - 7 < 13a - 8 \Rightarrow a > 1$



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V9

 $(a+b)(a-b) = a^2 - b^2$	 $(x+2)(x-2) = x^2 - 4$
$(a+b)^2 = a^2 + 2ab + b^2$	$(3x+1)^2 = 9x^2 + 6x + 1$ $(2X+3Y)^2 = 4X^2 + 12XY + 9Y^2$
$(a-b)^2 = a^2 - 2ab + b^2$	$(x-5)^2 = x^2 - 10x + 25$ $(3X-2Y)^2 = 9X^2 - 12XY + 4Y^2$



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V10

 $(\sqrt{a})^2 = a$	 $(\sqrt{5})^4 = 25$	$3\sqrt{49} = 21$
$\sqrt{a \times b} = \sqrt{a} \times \sqrt{b}$	$\sqrt{2} \times \sqrt{8} = \sqrt{16} = 4$	$2\sqrt{2} \times \sqrt{50} = 2\sqrt{100} = 20$
$x^2 = 9 \Rightarrow x = 3 ; x = -3$	$x^2 = 0,25 \Rightarrow x = -0,5 ; x = 0,5$	

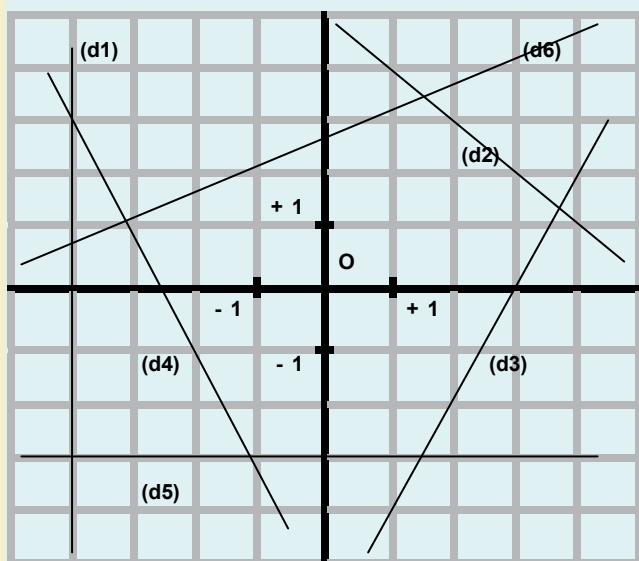
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V11

 $(x-1)(2x+4) = 0$ $\Rightarrow x = 1 ; x = -2$	 $(x+1)(x-1) = 0 \Rightarrow x = 1 ; x = -1$	
	$(x-5)(3x+15) = 0 \Rightarrow x = 5 ; x = -5$	
	$(-2x+9)(-5x+3) = 0 \Rightarrow x = 0,6 ; x = 4,5$	
$\begin{cases} x+2y=0 \\ x+y=1 \end{cases}$ $\Rightarrow x = 2 ; y = -1$	$\begin{cases} x+5y=10 \\ x+2y=4 \end{cases}$ $\Rightarrow x = 0 ; y = 2$	$\begin{cases} -3x+2y=5 \\ x+4y=3 \end{cases}$ $\Rightarrow x = -1 ; y = -1$

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V12



$$2y = x + 5 \Rightarrow (d6)$$



$$x = -4 \Rightarrow (d1)$$

$$y = -3 \Rightarrow (d5)$$

$$y = -x + 5 \Rightarrow (d2)$$

$$y = 2x - 6 \Rightarrow (d3)$$

$$y = -2x - 5 \Rightarrow (d4)$$

. /5

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