Math 4 Classwork #11

1. Remove parentheses and simplify:

a). $(2\boldsymbol{x} - 4) : 4 + \left(\frac{1}{2}\boldsymbol{x} + \frac{2}{3}\right) \cdot 3 =$ ____

b). $\left(\frac{3}{4} - \boldsymbol{x}\right) \cdot 2 + \left(\boldsymbol{x} + \frac{1}{6}\right) \cdot 3 =$ ____

2. Multiply:

$1 \times 1 =$ $1 \times (-1) =$ $(-1) \times 1 =$ $(-1) \times (-1) =$

$3 \times 5 =$ $3 \times (-5) =$ $(-3) \times 5 =$ $(-3) \times (-5) =$

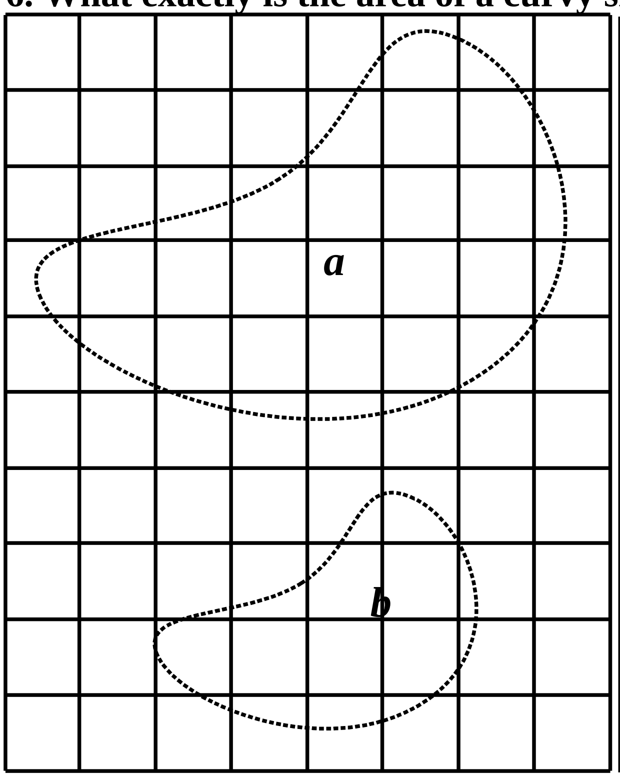
3. Solve the equations:

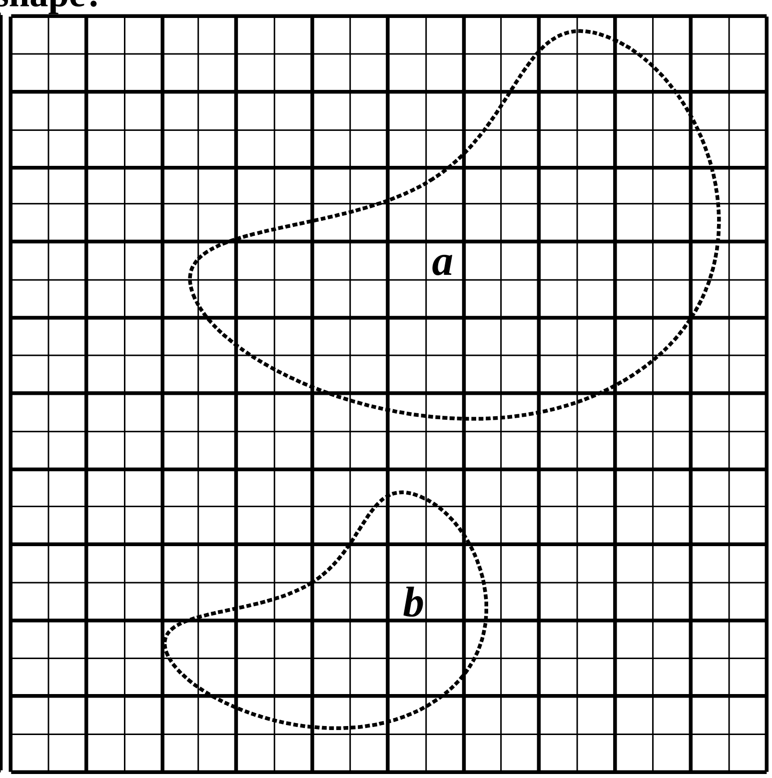
$\frac{2}{5}x = \frac{1}{15}$ $\frac{1}{3}x + \frac{1}{3} = \frac{1}{2}$ $\frac{5}{16} - \frac{y}{5} = \frac{1}{4}$

5. Cross out the equations that are impossible to solve, and solve the rest:

$|\boldsymbol{y} + 2| = 4$ $|\boldsymbol{y} + 2| = -4$ $|\boldsymbol{x} - 3| = -1$ $|\boldsymbol{x} - 3| = 1$

6. What exactly is the area of a curvy shape?





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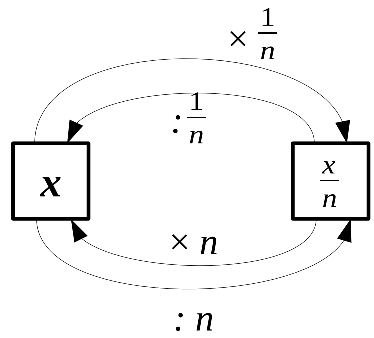


7. Calculate:

$2 \times \frac{1}{4} =$

$\frac{1}{10} \times \frac{1}{2} =$

$\frac{1}{5} \times \frac{1}{6} =$

$2 : \frac{1}{4} =$

$\frac{1}{10} : \frac{1}{2} =$

$\frac{1}{5} : \frac{1}{6} =$

$2 \times \frac{1}{5} =$

$\frac{1}{10} : \frac{1}{6} =$

$\frac{1}{12} : \frac{1}{4} =$

$2 : \frac{1}{5} =$

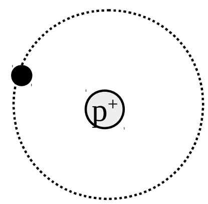
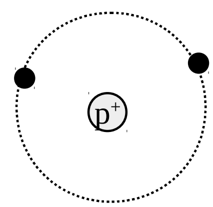
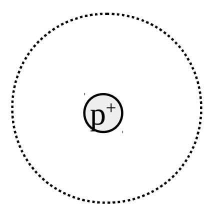
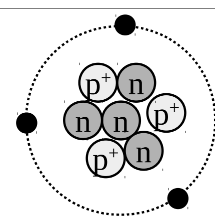
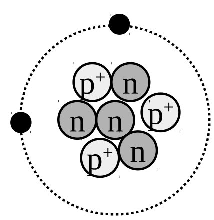
$\frac{1}{10} \times \frac{1}{6} =$

$\frac{1}{12} \times \frac{1}{4} =$

8. Negative numbers in atoms:

Atoms contain positive protons and negative electrons. A proton has an electric charge **+1**. An electron has an electric charge **–1**. Atoms do not have net electric charges since the numbers of electrons and protons are equal. Electrons can be added to atoms or removed from atoms. This way atoms acquire a charge becoming ions.

A. Complete the table:

Symbol	Protons	Neutrons	Electrons	Diagram	Electric charge
H					
					
					
Li					
					

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B. Complete the table:

Symbol	Protons	Electrons	Electric charge
O	8	8	
O^{2-}	8		–2
Na	11		0
Na^{+}	11	10	
N		7	0
N^{3-}	7		–3
Mg	12		0
Mg^{2+}	12		+2

C. Calculate resulting electric charges

$Fe - 2e \rightarrow Fe^{+2}$ $\quad 0 - (-1) \times 2 = 2$

$Ag - 1e \rightarrow$ _____ _______________

$O + 2e \rightarrow$ __________ _______________

$Ti^{+3} - 1e \rightarrow$ __________ _______________

$N^{+4} + 2e \rightarrow$ __________ _______________