

Contrôle préparé automatismes version maison

1°) Calculer.

$$5^3 = 5 \times 5 \times 5 = 125$$

$$(-2)^4 = \overbrace{(-2) \times (-2) \times (-2) \times (-2)}^{16} = 16$$

$$-2^4 = -2 \times 2 \times 2 \times 2 = -16$$

2°) Comparer.

$$1,001 < 1,01$$

$$10,01 < 10,1$$

$$0100,01 < 100,010$$

3°) Calculer.

$$-4 - 3 = -7$$

$$4 - 3 = 1$$

$$3 - 4 = -1$$

$$-4 + 3 = -1$$

$$-4 \times (-3) = 12$$

$$-4 \times 3 = -12$$

$$4 \times (-3) = -12$$

$$-3 \div (-4) = \frac{3}{4} = 0,75$$

4°) Simplifier.

$$\frac{14}{21} = \frac{2 \times 7}{3 \times 7} = \frac{2}{3}$$

$$\frac{15}{5} = \frac{3 \times 5}{1 \times 5} = 3$$

$$\frac{12}{18} = \frac{2 \times 6}{3 \times 6} = \frac{2}{3}$$

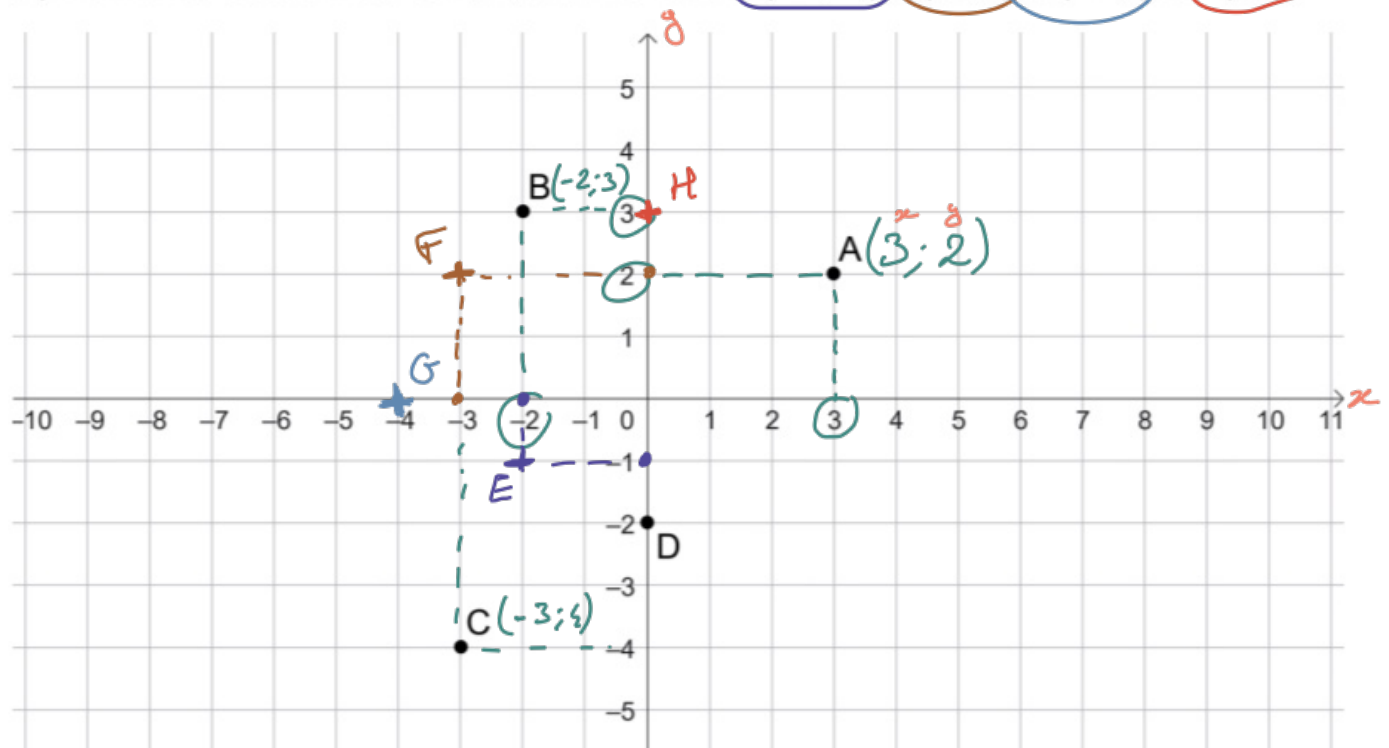
5°) Comparer.

$$\frac{7}{13} > \frac{6}{13}$$

$$\frac{23}{24} < 1$$

$$\frac{3 \times 3}{3 \times 4} > \frac{2 \times 4}{3 \times 4} \quad \left| \quad \frac{9}{12} > \frac{8}{12} \right.$$

6°) Donner les coordonnées de A, B, C et D. Placer E(-2 ; -1), F(-3 ; 2), G(-4 ; 0) et H(0 ; 3).



Calculatrice interdite

7°) Uniquement d'après le codage, quelle est la nature des triangles ?



8°) Mettre en écriture scientifique.

$$158000 = 1,58 \times 10^5$$

$$0,000678 = 6,78 \times 10^{-4}$$

$$452 \times 10^7 = 4,52 \times 10^2 \times 10^7 = 4,52 \times 10^9$$

9°) Calculer.

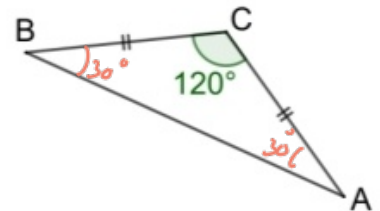
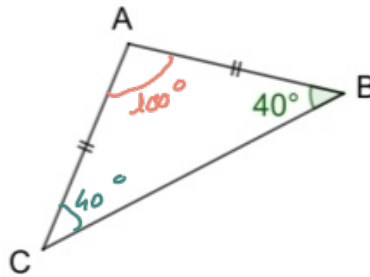
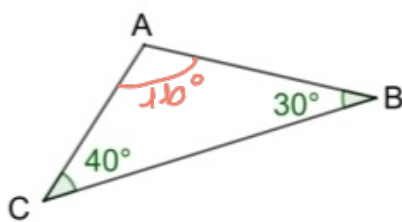
$$9^2 = 9 \times 9 = 81$$

$$14^2 = 14 \times 14 = 196$$

$$\begin{array}{l} 14 \times 10 = 140 \\ 14 \times 4 = 56 \end{array}$$

$$0,01^2 = 0,01 \times 0,01 = 0,0001$$

10°) Calculer l'angle $\widehat{BAC}$.



11°) Calculer.

$$\frac{1}{3} \times 12 = 4$$

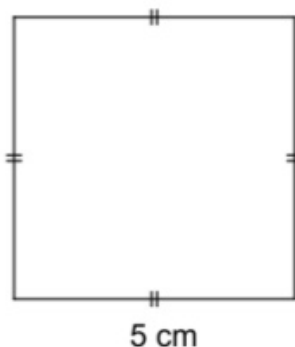
La quart de 20 = 5

$$20\% \text{ de } 180 = \frac{20}{100} \times 180 = 36$$

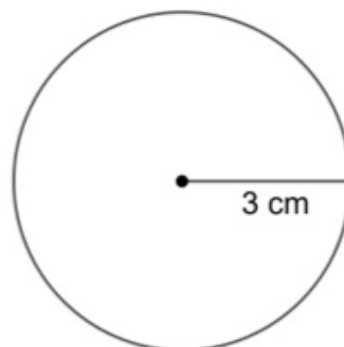
12°) Réduire.

$$5x + 7 + 3x + 2 = 8x + 9 \quad 6x - 8 + 9 - 7x = -x + 1 \quad 3x^2 + 5x - 7 - x^2 - 7x - 2 = 2x^2 - 2x - 9$$

13°) Calculer le périmètre.



$$P = 4 \times 5 = 20 \text{ cm}$$



$$\begin{aligned} P &= 2 \times r \times \pi \\ &= 2 \times 3 \times \pi \\ &= 6\pi \\ &\approx 6 \times 3,14 \\ &\approx 18,84 \text{ cm} \end{aligned}$$

Calculatrice interdite

14°) Remplir les tableaux de proportionnalité.

3	5
6	<u>10</u>

$$\frac{5 \times 6}{3} = \frac{30}{3} = 10$$

6	18
7	21

$$\frac{6 \times 21}{7} = \frac{126}{7} = 18$$

6	4
<u>9</u>	6

$$\frac{6 \times 6}{4} = \frac{36}{4} = 9$$

15°) Développer.

$$x(x+7) = x \times x + x \times 7 = x^2 + 7x$$

$$(x+2)(x-5) = x \times x + x \times (-5) + 2 \times x + 2 \times (-5) = x^2 - 5x + 2x - 10 = x^2 - 3x - 10$$

$$(x-7)(x+7) = x \times x + x \times 7 + (-7) \times x + (-7) \times 7 = x^2 + 7x - 7x - 49 = x^2 - 49$$

16°) Trouver une médiane.

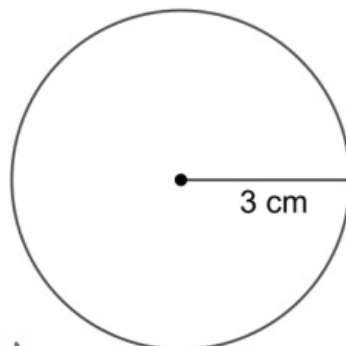
5 ; 13 ; 17

4 ; 11 ; 13 ; 18
 $\frac{11+13}{2} = \frac{24}{2} = 12$

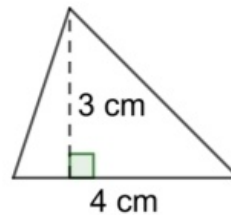
17 ; 2 ; 9 ; 16
2 ; 9 ; 16 ; 17
 $\hookrightarrow \frac{9+16}{2} = \frac{25}{2} = 12,5$

17°) Calculer l'aire.

$$\begin{array}{r} 3,14 \\ \times 9 \\ \hline 28,26 \end{array}$$



$$A = \pi \times r \times r = \pi \times 3 \times 3 = \pi \times 9 \approx 3,14 \times 9 \approx 28,26 \text{ cm}^2$$



$$A = \frac{b \times h}{2} = \frac{4 \times 3}{2} = 6 \text{ cm}^2$$

18°) Factoriser.

$$xy + 5x = x(y+5)$$

$$x^2 - 3x = x(x-3)$$

$$(x-3)(x+1) + (x-3)(x+4) = (x-3)((x+1)+(x+4)) = (x-3)(x+1+x+4) = (x-3)(2x+5)$$

19°) Résoudre les équations d'inconnue x.

$$\begin{array}{l} x - 10 = 4 \\ x = 4 + 10 \\ x = 14 \end{array}$$

$$\begin{array}{l} 3x - 7 = 11 \\ 3x = 11 + 7 \\ 3x = 18 \\ x = \frac{18}{3} = 6 \end{array}$$

$$\begin{array}{l} 7x + 5 = 5x - 7 \\ 7x - 5x = -7 - 5 \\ 2x = -12 \\ x = -\frac{12}{2} = -6 \end{array}$$

20°) Calculer ???.

