

Corrigé

Partie 1

Exercice 1

(a) $15 \div 5 - 11 = 3 - 11 = -8$

(b) $3^2 - 2 \cdot 3 = 9 - 6 = 3$

(c) $11 + (2 - 4)^2 - 18 \div 3 = 11 + (-2)^2 - 6 = 11 + 4 - 6 = 9$

(d) $\sqrt{16} + \sqrt{9} - \sqrt{16 + 9} = 4 + 3 - \sqrt{25} = 7 - 5 = 2$

Exercice 2

(a) $\frac{24}{8} \cdot \frac{14}{21} = \frac{3}{1} \cdot \frac{2}{3} = \frac{2}{1} = 2$

(b) $\frac{32}{25} \div \frac{24}{75} = \frac{32}{25} \cdot \frac{75}{24} = \frac{4 \cdot 3}{1 \cdot 3} = \frac{4}{1} = 4$

(c) $\frac{5}{9} - \frac{7}{6} = \frac{5 \cdot 2 - 7 \cdot 3}{18} = \frac{10 - 21}{18} = -\frac{11}{18}$

Exercice 3

(a) $2xy + 4x^2y - 8xy + 2xy^2 - 10x^2y + 2xy^2 = -6xy - 6x^2y + 4xy^2$

(b) $5a + 4b - (2b - 4a) + a + (2b - 5a) = 5a + 4b - 2b + 4a + a + 2b - 5a = 5a + 4b$

(c) $8a^2b \cdot (a - 3b - 9c) = 8a^3b - 24a^2b^2 - 72a^2bc$



Exercice 4

Employés	Heures	Jouets
2	4	8

1. Un employé fabrique combien de jouets en une heure ?

Employés	Heures	Jouets
2	4	8
1	4	4
1	1	1

Réponse : 1 jouet

2. En combien de temps sont fabriqués 30 jouets par cinq employés ?

Employés	Heures	Jouets
1	1	1
5	1	5
5	6	30

Réponse : En 6 heures

3. Si un employé travaille seul pendant trois heures puis trois autres employés le rejoignent et travaillent avec lui pendant 3 heures supplémentaires, combien de jouets sont fabriqués au total ?

Employés	Heures	Jouets
1	1	1
1	3	3

3 premières heures : 3 jouets

Employés	Heures	Jouets
1	1	1
4	1	4
4	3	12

3 heures suivantes : 12 jouets

Réponse : 15 jouets



Exercise 5

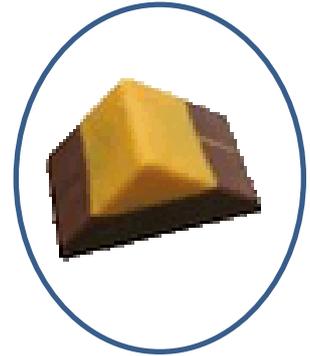
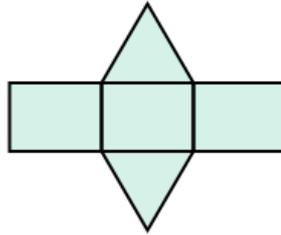
$$\begin{aligned} \text{(a)} \quad h &= \frac{3 \cdot V}{\pi \cdot r^2} && \cdot \pi \cdot r^2 \\ \pi \cdot h \cdot r^2 &= 3 \cdot V && \cdot \frac{1}{3} \\ \boxed{V} &= \frac{\pi \cdot h \cdot r^2}{3} \end{aligned}$$

$$\begin{aligned} \text{(b)} \quad h &= \frac{3 \cdot V}{\pi \cdot r^2} && \cdot \pi \cdot r^2 \\ \pi \cdot h \cdot r^2 &= 3 \cdot V && \cdot \frac{1}{\pi \cdot h} \\ r^2 &= \frac{3 \cdot V}{\pi \cdot h} && \sqrt{} \\ \boxed{r} &= \sqrt{\frac{3 \cdot V}{\pi \cdot h}} \end{aligned}$$

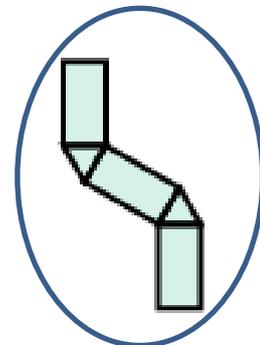
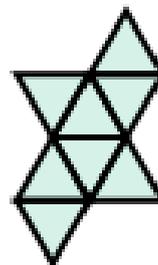
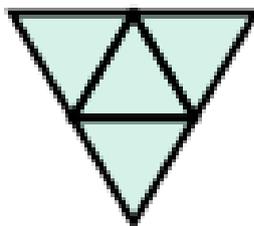
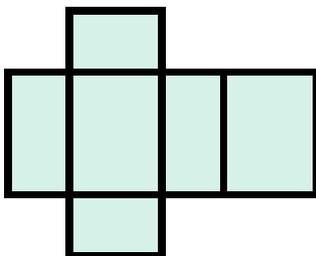
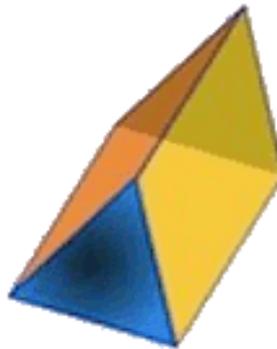


Exercice 6

a) Associer l'image 2D correspondant à la bonne figure 3D (entourer la bonne réponse).

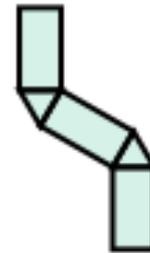
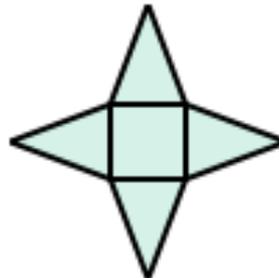
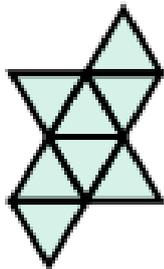
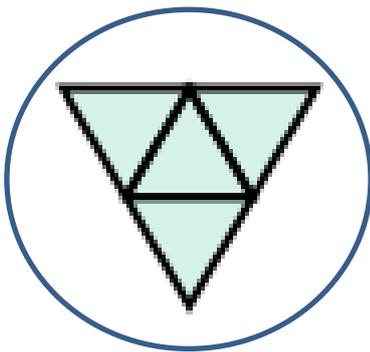
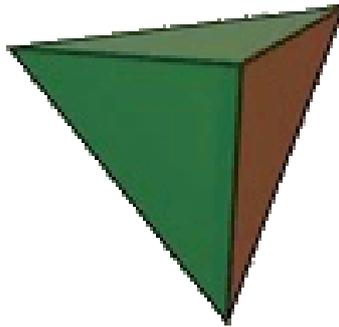


b) Associer l'image 3D correspondant à la bonne figure 2D (entourer la bonne réponse).

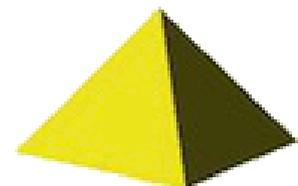
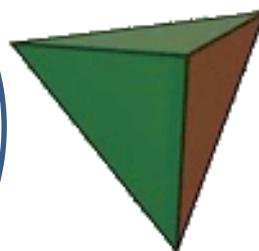
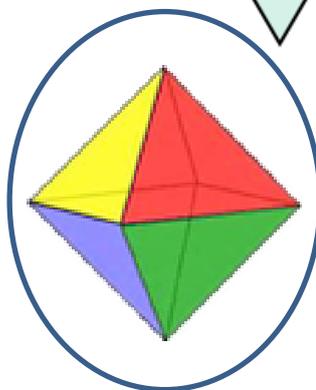
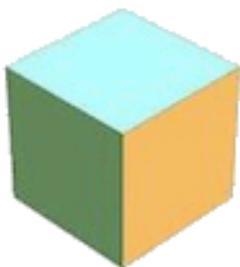
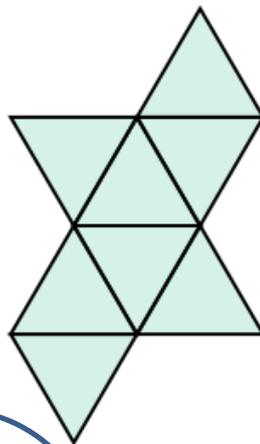




c) Associer l'image 3D correspondant à la bonne figure 2D (entourer la bonne réponse).



d) Associer l'image 2D correspondant à la bonne figure 3D (entourer la bonne réponse).





Partie 2

Exercice 1

$$\begin{array}{l|l} 79x - 56 + x^3 - 2x - x^3 = 10 - 11x & \text{Réduire} \\ 77x - 56 = 10 - 11x & +11x + 56 \\ 88x = 66 & \cdot \frac{1}{88} \\ x = \frac{66}{88} = \frac{3}{4} = 0.75 & \end{array}$$

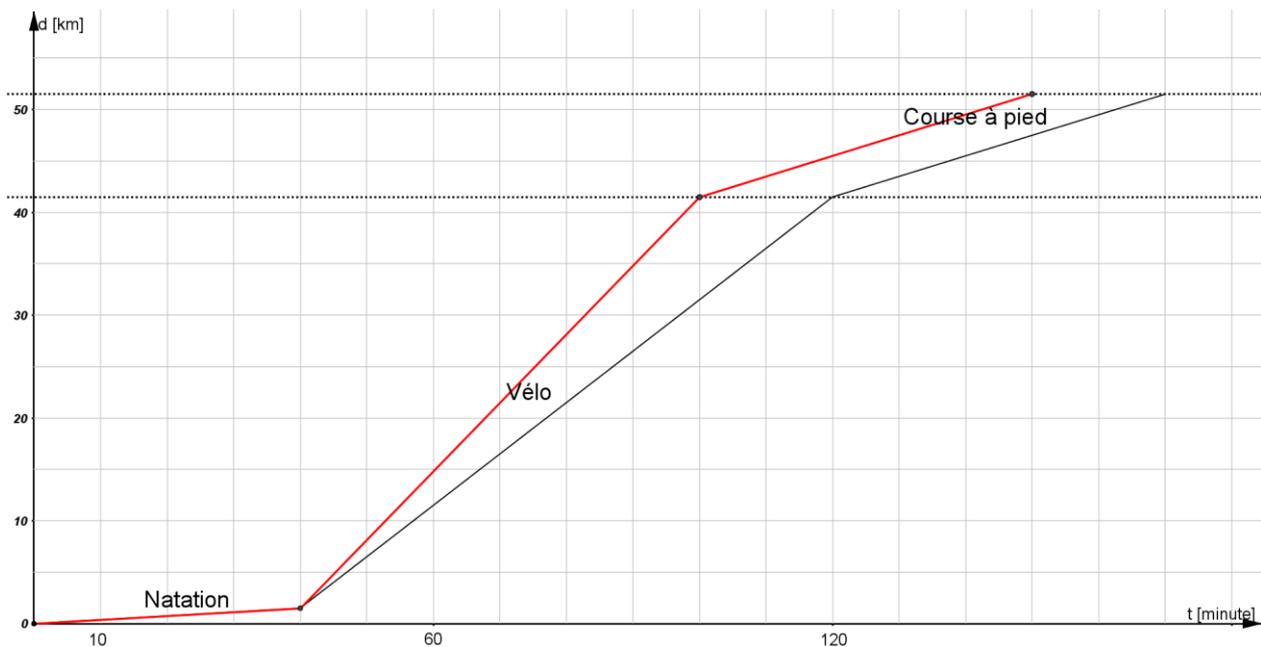
Exercice 2

$$s = 2 \cdot 32 + \frac{5.2 \cdot 32^2}{2} = 64 + \frac{5.2 \cdot 1024}{2} = 64 + \frac{5324.8}{2} = 64 + 2662.4 = 2726.4 \text{ m}$$

Exercice 3

$$S = (3 + 4 + 5) \cdot 7 + 2 \cdot \frac{1}{2} \cdot 4 \cdot 3 = 12 \cdot 7 + 4 \cdot 3 = 84 + 12 = 96 \text{ cm}^2$$

Exercice 4



a) distance = 1.5 km

$$\text{temps} = 40 \text{ minutes} = \frac{40}{60} = 0.\bar{6} \text{ heure}$$

$$\text{vitesse} = \frac{1.5}{0.6} = 2.25 \text{ km/h}$$

b) Vélo : $t = \frac{d}{v} = \frac{10}{12} = 0.8\bar{3} \text{ heure} = 0.8\bar{3} \cdot 60 = 50 \text{ minutes}$