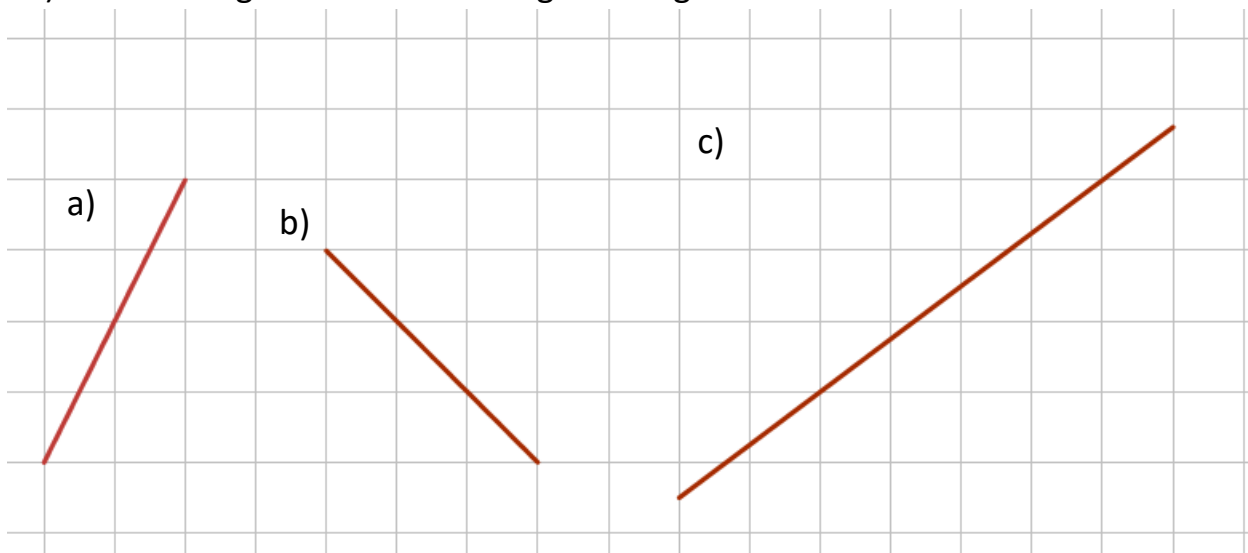


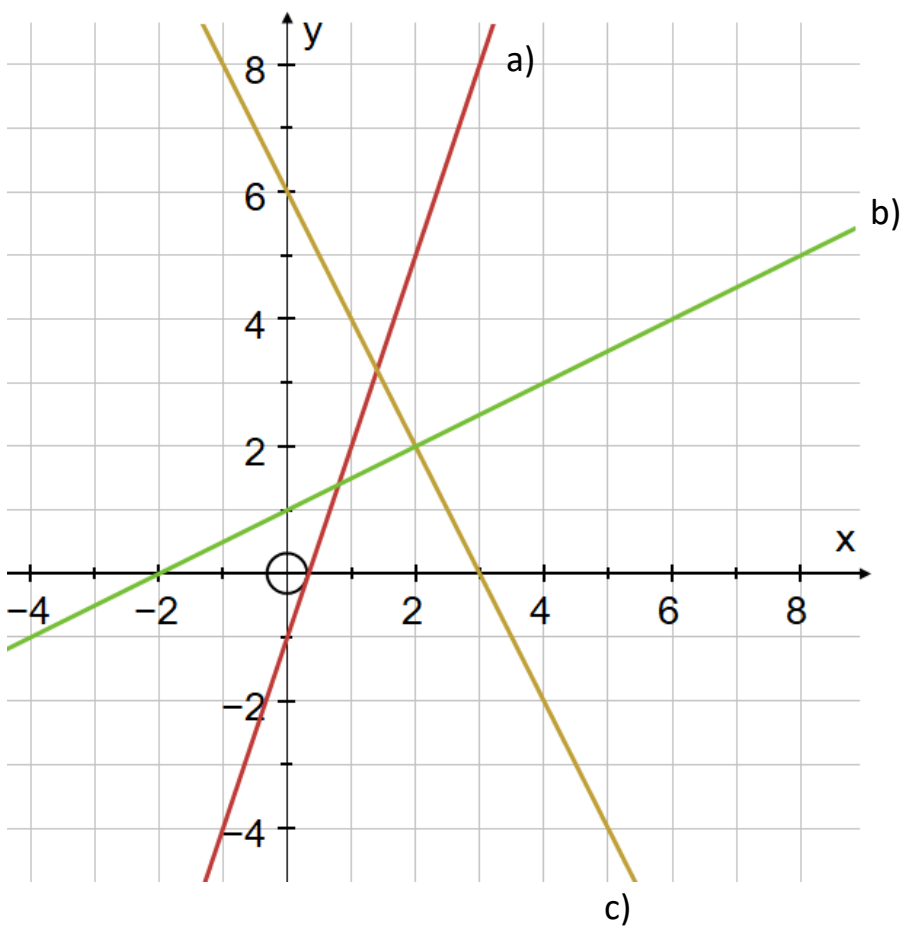
## Theme 6 and 7 Revision

- 1) Express these ratios in their simplest form
  - a)  $18 : 24 : 36$
  - b)  $\frac{1}{3} : \frac{3}{4}$
  - c)  $0.24 \text{ m} : 6 \text{ cm}$
  
- 2) Divide £450 in the ratio  $1 : 2 : 6$
  
- 3) The lengths in a scale model and real plane are in the ratio  $1:300$ 
  - a) Given that the model is 4.5cm long, find the length of the real plane
  - b) Given that the wingspan of the real plane is 9m, find the wingspan of the model
  
- 4) The ages of Albie, Bertie and Charlie are in the ratio of  $3:4:7$   
Given that Charlie is 12 years older than Bertie, find the age of Bertie.
  
- 5) Chocco Milk is made from chocolate syrup and milk in the ratio of  $2 : 13$   
If I use 80ml of chocolate syrup, how much milk will I need?
  
- 6) Lord Fang has died and left his fortune of £2,400,000 to his 3 daughters.  
30% of his fortune is paid to the government in tax.  
His daughters Xena, Yana and Zia then split the rest in the ratio  $6:7:8$   
How much does each daughter receive?
  
- 7) It takes 3 months for 20 workers to build a house.
  - a) How many workers should I use to complete it in 2 months?
  - b) How long would it take if I only used 6 workers?
  
- 8) In a school the ratio of boys to girls is  $4:5$ .  
The ratio of teachers to girls is  $3:50$ .  
The school has been asked to have at least one teacher for every 12 boys, have they managed it?
  
- 9) Find the equation of the straight line with gradient of 4 that passes through  $(1,5)$
  
- 10) Find the equation of the straight line parallel to  $y = 3x$  that passes through  $(2,-2)$
  
- 11) Find the equation of the straight line that passes through  $(4,5)$  and  $(1,2)$
  
- 12) Find the equation of the straight line that passes through  $(-2,3)$  and  $(4,6)$
  
- 13) Find an expression for the gradient of AB if A is  $(r + 1, q)$  and B is  $(r + 2, 4q)$

14) Find the gradient of the straight lines given below

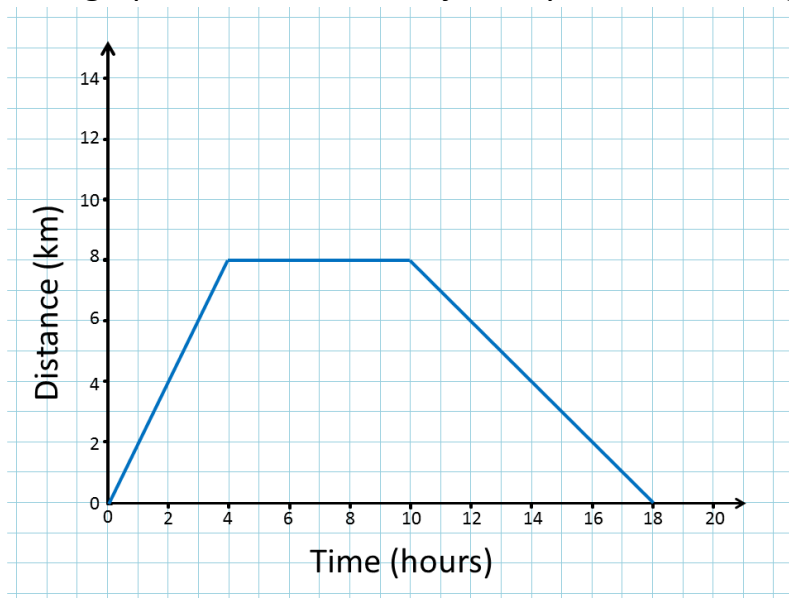


15) Write down the equation of the straight lines given below



- 16) A cat runs forwards 45 meters in 9 seconds. Find its average speed and state the unit
- 17) A car drives at an average speed of 48mph for 45 minutes. How far does it travel?
- 18) I walk at an average speed of 3km/hr. How long would it take me to travel 8km?
- 19) Jamie runs at 6m/s for 2 minutes and then at 9m/s for 1 minute. Find his average speed for the whole time.

20) The distance-time graph below shows the journey of a sloth along a straight path



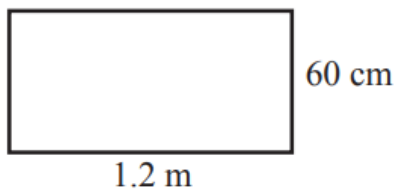
- a) Find the speed of the sloth 3 hours into the journey
- b) For how long did the sloth stay stationary?
- c) Find the speed that the sloth returns down the path

21) Find the volume of a cuboid that measures 4cm by 3cm by 7cm

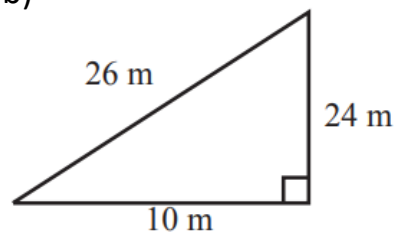
22) 6 cubes, each with volume of  $8\text{cm}^3$  are placed together to form a cuboid. Find the dimensions of this cuboid.

23) Find the area of the following shapes:

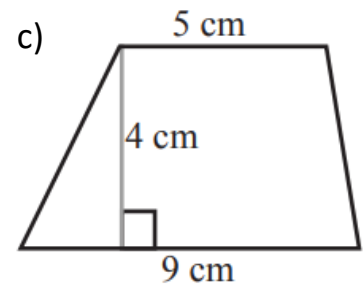
a)



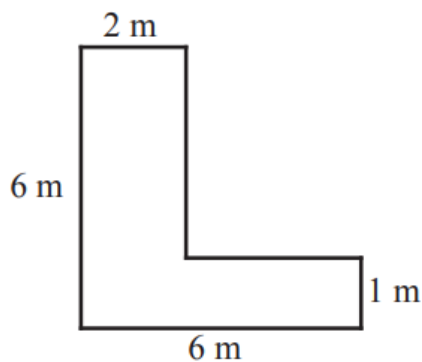
b)



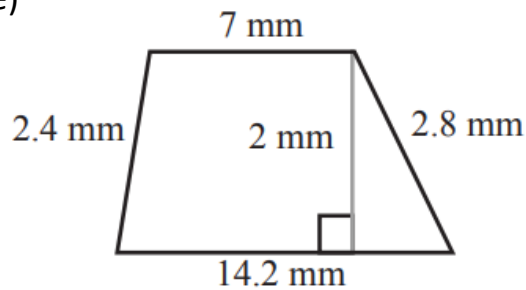
c)



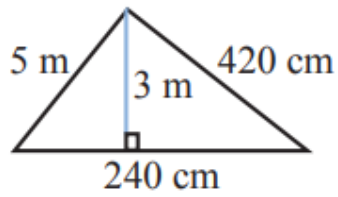
d)



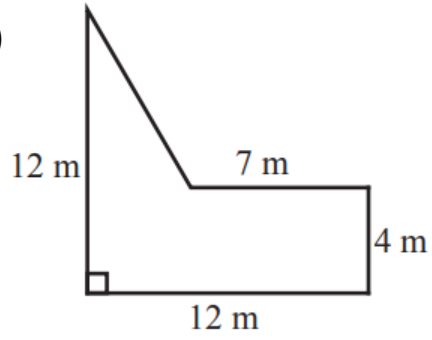
e)



f)

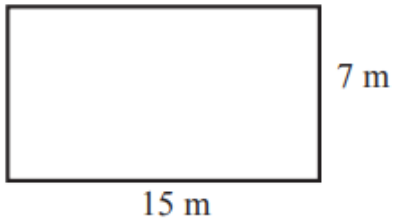


g)

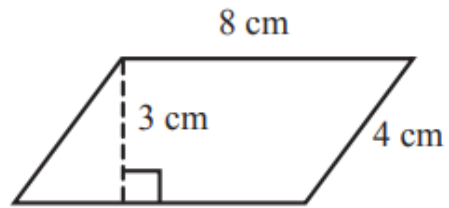


24) Find the perimeter of the shapes below

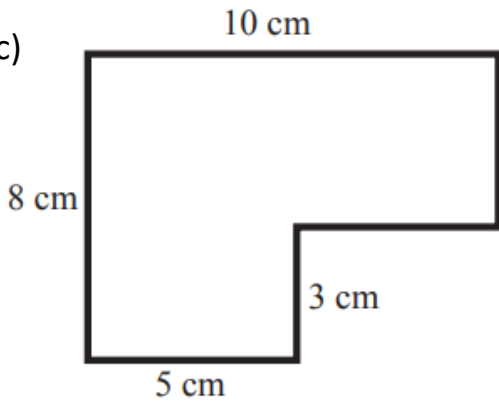
a)



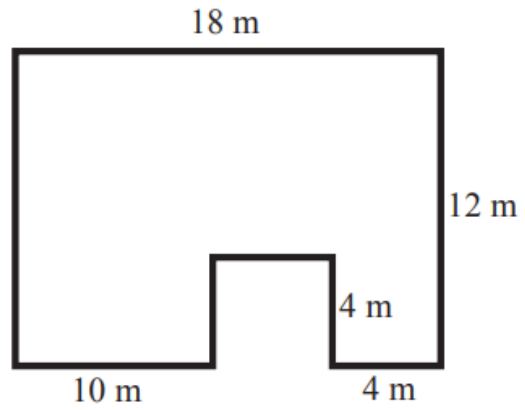
b)



c)

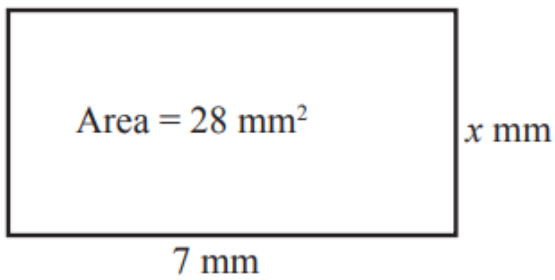


d)

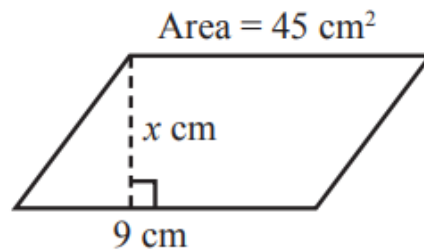


25) Find the missing lengths labelled with  $x$  in the shapes below

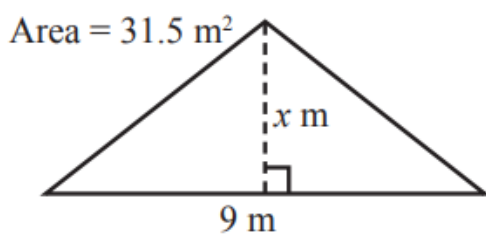
a)



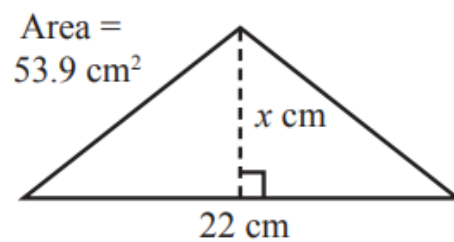
b)



c)



d)



## Answers

1a) 3:4:6 b) 4:9 c) 4:1 2) £50, £100, £300 3a) 13.5m b) 3cm 4) 16 5) 520ml

6) £480,000 £560,000 £640,000 7a) 30 b) 10 months 8) No 13.3 instead.

9)  $y = 4x + 1$  10)  $y = 3x - 8$  11)  $y = x + 1$  12)  $y = \frac{1}{2}x + 4$  13)  $3q$

14a) 2 b) -1 c)  $\frac{3}{4}$  15a)  $y = 3x - 1$  b)  $y = \frac{1}{2}x + 1$  c)  $y = -2x + 6$

16) 9m/s 17) 36 miles 18) 2hr 40m 19) 7m/s 20a) 2km/hr b) 6hr c) 1km/hr

21)  $84\text{cm}^3$  22) 6cm, 4cm, 2cm 23a)  $7200\text{cm}^2$  or  $0.72\text{m}^2$  b)  $120\text{m}^2$  c)  $28\text{cm}^2$

d)  $16\text{m}^2$  e)  $21.2\text{mm}^2$  f)  $36000\text{cm}^2$  or  $3.6\text{m}^2$  g)  $68\text{m}^2$  24a) 44m b) 24cm c) 36cm

d) 68m 25a) 4mm b) 5cm c) 7m d) 4.9cm