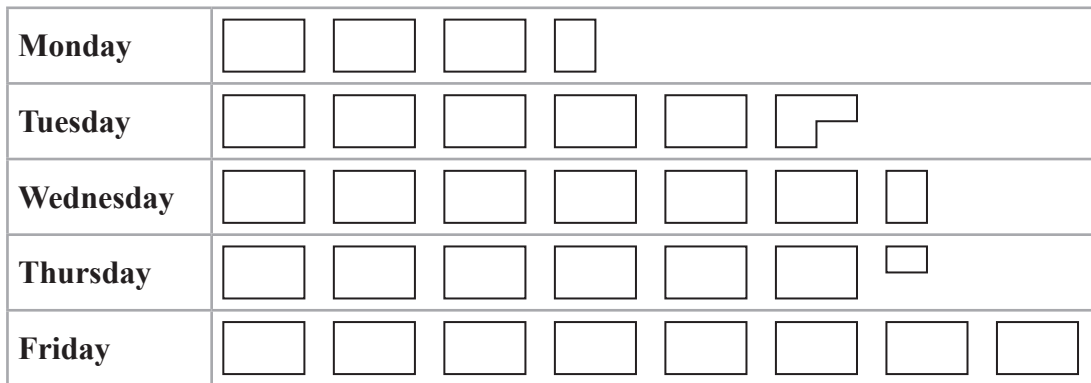


- 10 The pictogram gives information about the number of emails Sami sent on each of five days last week.



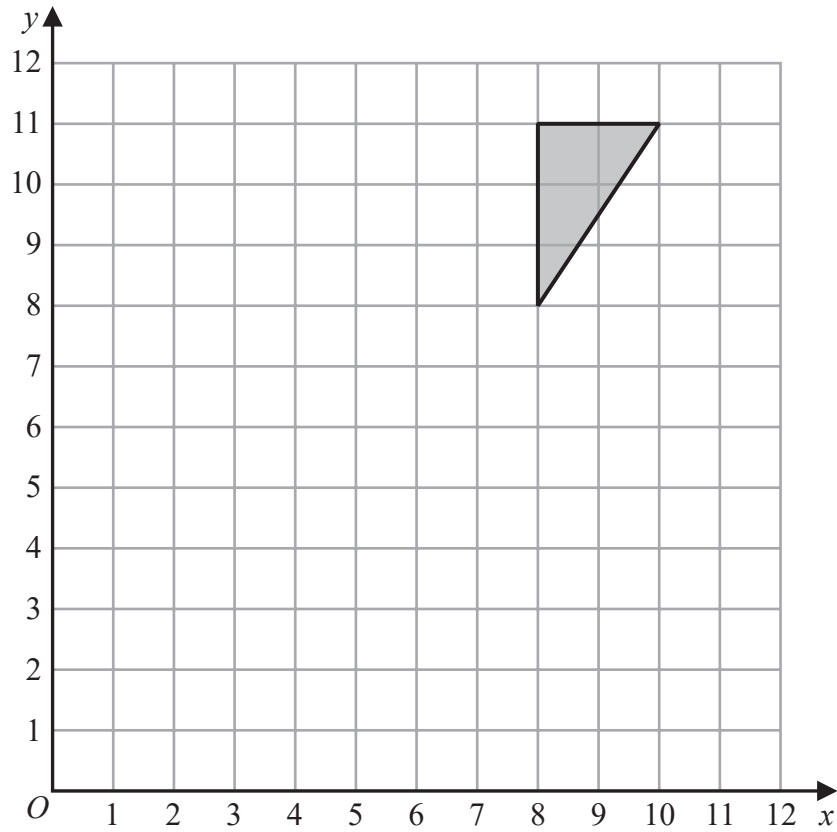
represents 8 emails

Work out the mean number of emails Sami sent on these 5 days.

(Total for Question 10 is 4 marks)

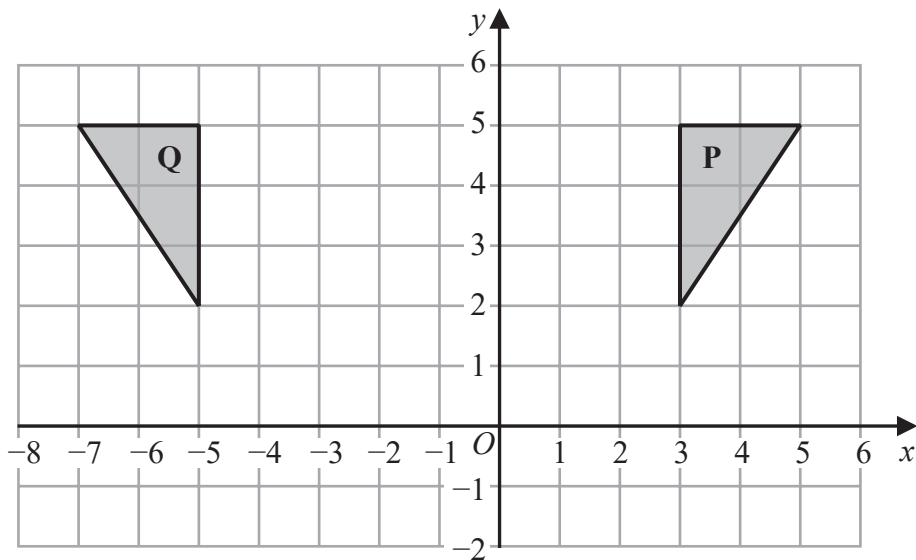


11



(a) On the grid above, rotate the triangle  $180^\circ$  about  $(7, 6)$

(2)



(b) Describe fully the single transformation that maps triangle **P** onto triangle **Q**.

(2)

(Total for Question 11 is 4 marks)

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA



12 (a) Use your calculator to work out the value of

$$\frac{24.3 - 16.8}{0.18} + \sqrt{67.4}$$

Write down all the figures on your calculator display.

.....  
(2)

(b) Write your answer to part (a) correct to 1 significant figure.

.....  
(1)

(Total for Question 12 is 3 marks)

13 Each exterior angle of a regular polygon is  $24^\circ$

Work out the number of sides of the polygon.

.....  
(Total for Question 13 is 2 marks)



DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

14 (a) Find the highest common factor (HCF) of 40 and 64

.....  
(2)

$$A = 2^n \times 3 \times 5^m$$

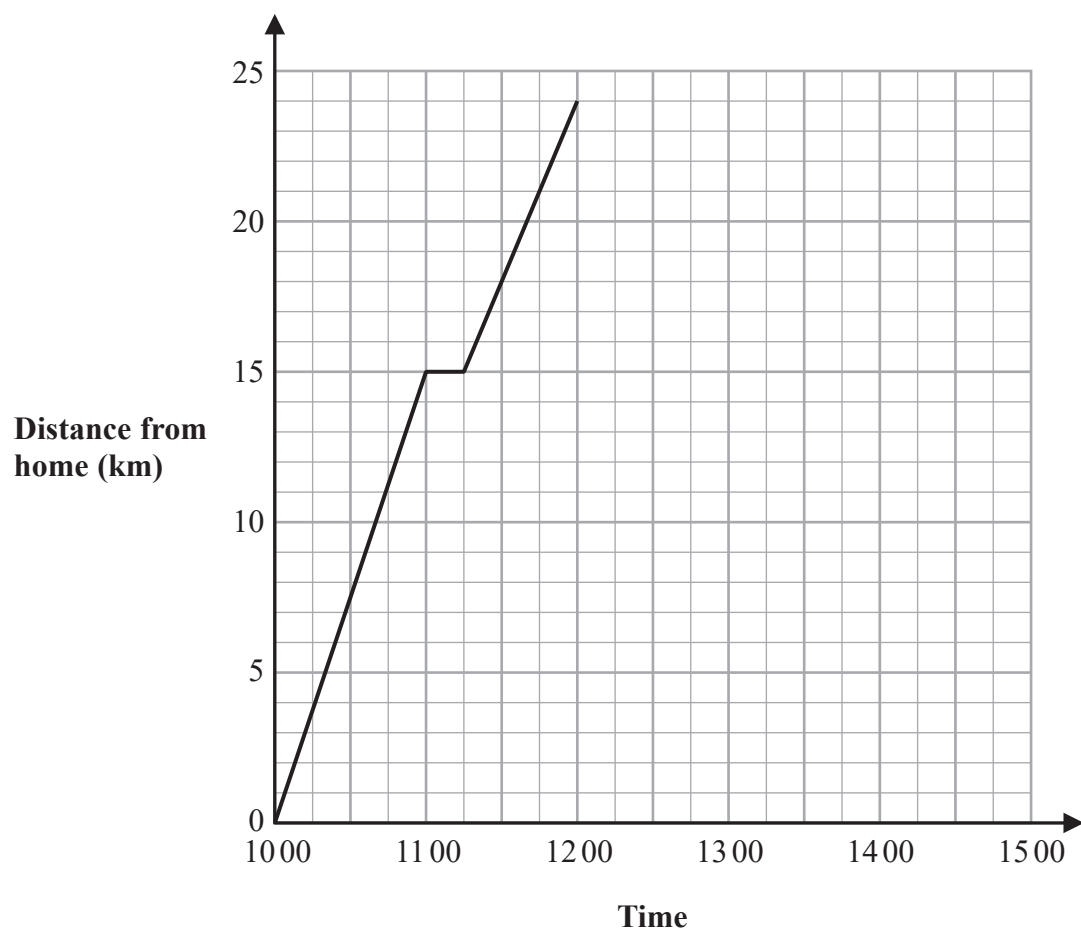
(b) Write  $8A$  as a product of powers of its prime factors.

.....  
(2)

**(Total for Question 14 is 4 marks)**



15 Jalina left her home at 1000 to cycle to a park.  
On her way to the park, she stopped at a friend's house and then continued her journey to the park.  
Here is the distance-time graph for her journey to the park.



(a) On her journey to the park, did Jalina cycle at a faster speed before or after she stopped at her friend's house?  
Give a reason for your answer.

.....

.....

.....

(1)



Jalina stayed at the park for 45 minutes.

She then cycled, without stopping, at a constant speed of 16 km/h from the park back to her home.

(b) Show all this information on the distance-time graph.

(2)

(c) Work out Jalina's average cycling speed, in kilometres per hour, for the complete journey to the park and back.

Do **not** include the times when she was not cycling in your calculation.

Give your answer correct to 1 decimal place.

..... km/h

(3)

(Total for Question 15 is 6 marks)



16  $P = 2g + 3h$

(a) Work out the value of  $P$  when  $g = 7$  and  $h = -4$

.....  
(2)

(b) Simplify  $e^9 \div e^5$

.....  
(1)

(c) Simplify  $(y^2)^8$

.....  
(1)

(d) Expand and simplify  $(x + 9)(x - 2)$

.....  
(2)

(e) Factorise fully  $16c^4p^2 + 20cp^3$

.....  
(2)

(Total for Question 16 is 8 marks)

