

S3 General – Homework 10

Non-calculator section:

1. Find the value of

(a) $4.16 + 0.347 + 18$

(b) $32.2 \div 40$

(c) 15% of 66 kg

(d) $1\frac{2}{3} + \frac{3}{4}$

2. The stem and leaf diagram below shows the number of cars passing through a road junction each 30 minutes, over a 12 hour period.

0		3	5	5	6	
1		2	6	6	6	9
2		3	3	4	8	
3		1	1	4	6	9
4		4	4	7	9	
5		6	8			

2 | 5 represents 25 $n = 24$



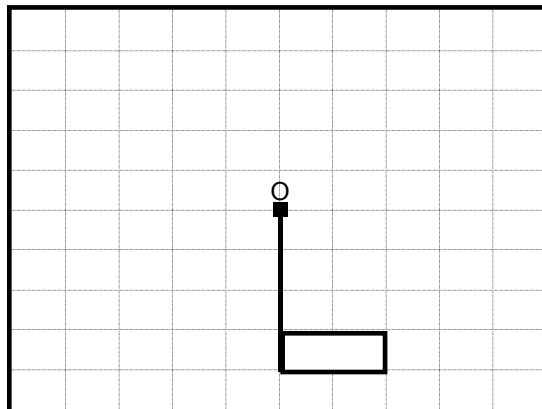
- What is the modal number of cars?
- Find the median.
- If a 30 minute period is selected at random, what is the probability more than 45 cars passed through the road junction?

3. (a) Simplify the expression $2(x - y) + 5(x - 2y)$

(b) Solve the inequation $4 + 3n > -2$

(c) Factorise fully $5gh - g^2$

4. Copy and complete the shape below so that it has quarter turn symmetry about O.

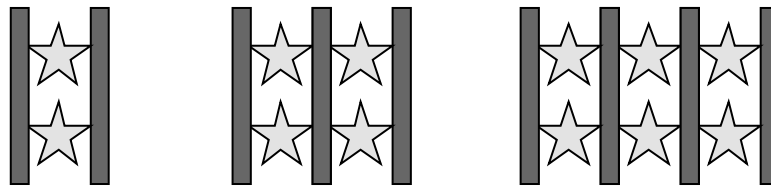


5. Blue, red and yellow paint are mixed together in the ratio 7:3:2. After mixing, 72 litres of paint is obtained.

How much blue paint was used?



6. A pattern is constructed using rectangles and stars.



(a) Copy and complete the table below for this pattern.

Number of rectangles (R)	2	3	4	5	6	25
Number of stars (S)	2	4	6			

(b) Write down a formula for finding the number of stars, S, if you know the number of rectangles, R.

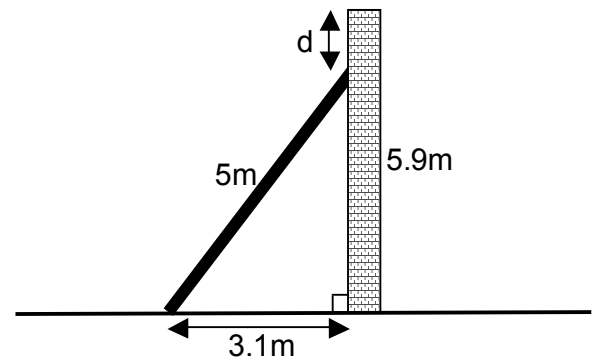
(c) How many rectangles would be needed for 78 stars?

Calculator section:

7. Calculate the simple interest on a sum of £4200 at a rate of 5.5% p.a. for 9 months.

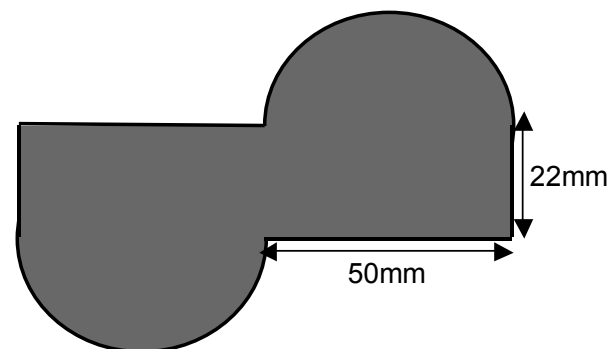
8. A wall 5.9 metres high is being supported by a piece of wood 5 metres long, as shown. The bottom of the piece of wood is placed 3.1 metres from the base of the wall.

Calculate d, the distance the top of the wood is below the top of the wall.



9. The diagram opposite consists of a rectangle with equally sized semi-circles placed above and below it.

Calculate the area of this shape.



10. In the diagram a block of flats casts a shadow 32 metres long. This occurs when the Sun has an angle of elevation of 40° .

Calculate the height, h, of the block of flats.

