



Year 10 Baseline Test

Mathematics

Foundation

Calculator

Time: 1 hour

Marks: 60 marks

Name _____

Date _____ Class _____



1. Jack wants to hire a bouncy castle for a birthday party. Hiring the bouncy castle will cost £20 to set up and then £15 per hour.

a. Using t to represent the number of hours, write an expression to describe the cost. [2 marks]

b. Jack decides to hire the bouncy castle for 5 hours. Calculate the total cost. [1 mark]

2. a. Factorise fully: $6a + 15$ [1 mark]

b. Expand: $5(2b - 3)$ [1 mark]

c. Simplify: $3a + 5b + 7a - 8b$ [2 mark]

3. a. Select all the square numbers: [1 mark]

5

☐

10

☐

2

☐

4

☐

1

☐

1000

☐

100

☐

- b. Alex states that when two prime numbers are added together, the answer will always be even. Is Alex correct? Justify your answer. [1 mark]

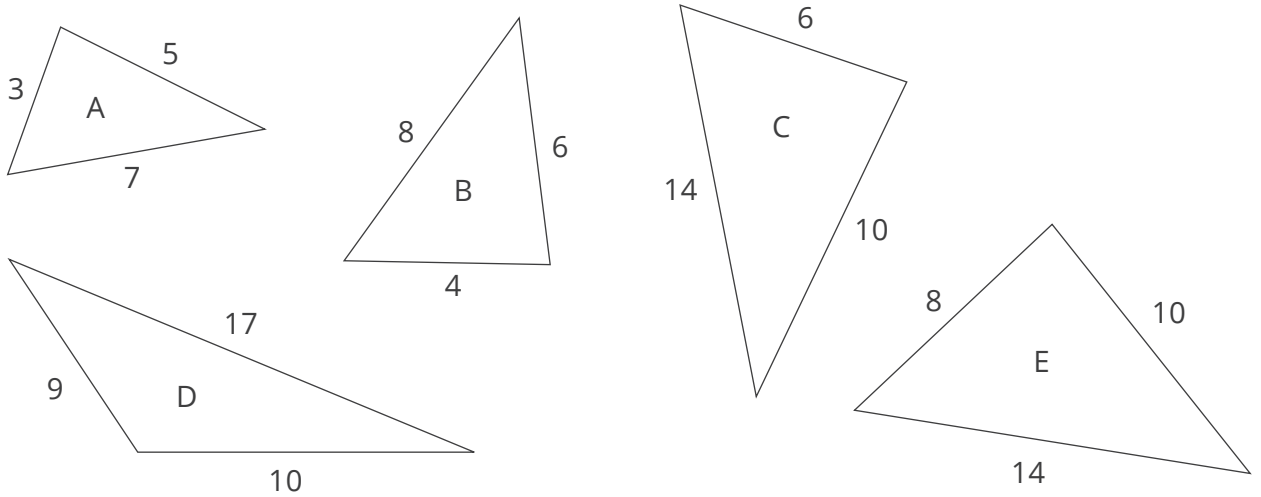
4. a. Find 25% of $\frac{3}{4}$ of 60. [2 marks]

b. Increase 240 by 18%.

[2 marks]

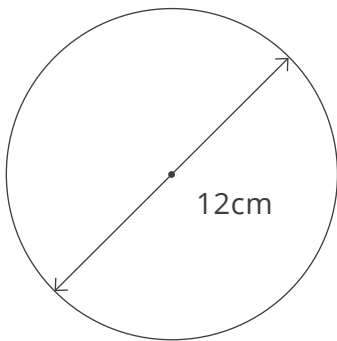
5. Identify the triangle which is similar to triangle A.

[1 mark]



6. a. Calculate the area of the circle. Give your answer correct to 1 decimal place.

[2 marks]



_____ cm²

b. The perimeter of another circle is 10cm. Find its radius, giving your answer correct to 2 decimal places.

[2 marks]

_____ cm

7. A gardener measures the heights of 10 sunflowers. The results are shown in the table.

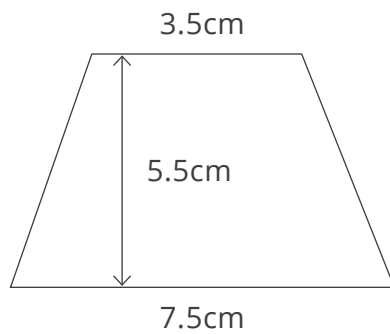
180cm
195cm
154cm
160cm
213cm
163cm
177cm
183cm
196cm
201cm

- a. Calculate the mean height of the sunflowers. Give your answer correct to the nearest centimetre. [2 marks]

_____ cm

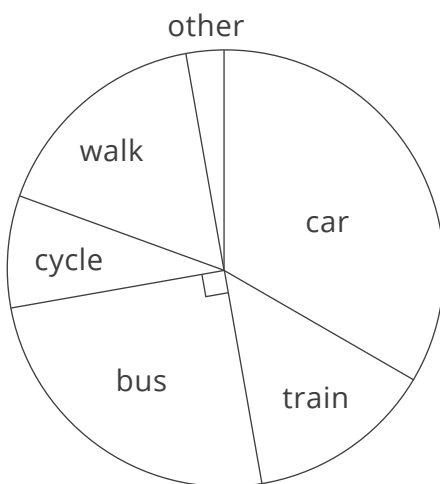
- b. Calculate the range of the heights of the sunflowers. [1 mark]

8. Calculate the area of the trapezium. [2 marks]



_____ cm²

9. The diagram summarises the results of a survey which asked 72 people how they travel to work.

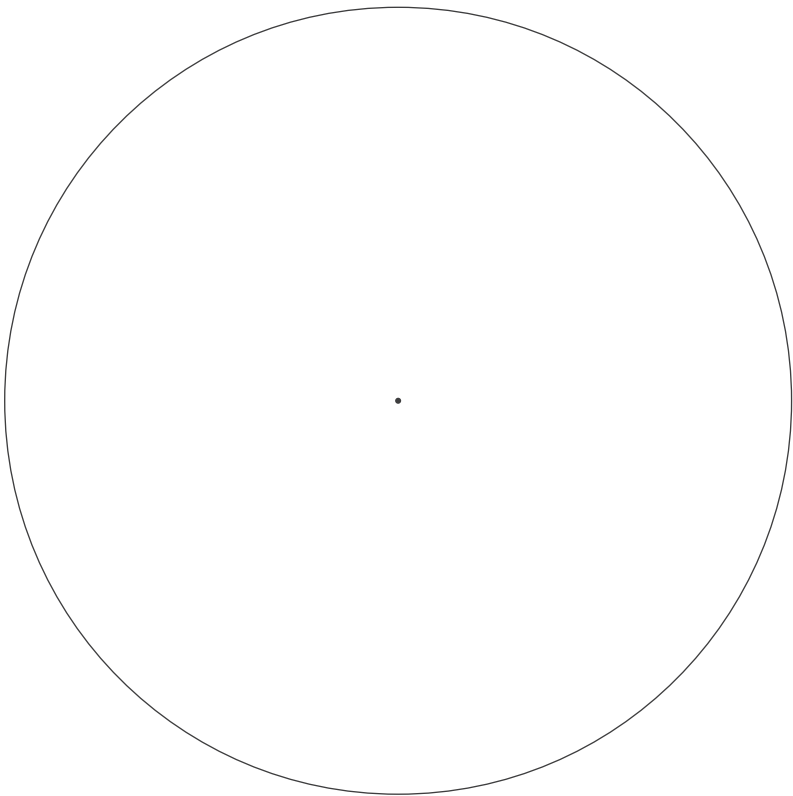


- a. Calculate how many people travel by bus. [1 mark]

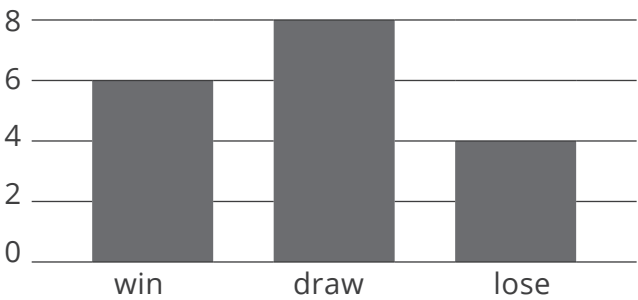
- b. Calculate how many people travel by train. [2 marks]

- c. The table below summarises the results of how long the journeys to work take. Draw a pie chart to represent this data. [3 marks]

Journey Time (mins)	Frequency
$0 < t \leq 15$	36
$15 < t \leq 30$	12
$30 < t \leq 45$	18
$45 < t \leq 90$	6

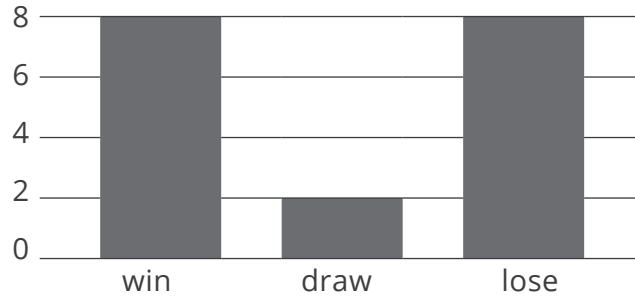


10. The chart shows the number of wins, draws and losses for a local football team.



- a. Using the chart, estimate the probability that the team will lose their next match. [1 mark]

Next season, the football team will play another local team. The results of the season so far for this team are shown in the chart below.



- b. Make 2 comparisons between the results of the two teams. [2 marks]

- c. If the teams are awarded 3 points for a win, 1 point for a draw and 0 points for a loss, which team scored more points for the season? You must show your working. [3 marks]



- a. Calculate the output if the input is 2.8. [1 mark]

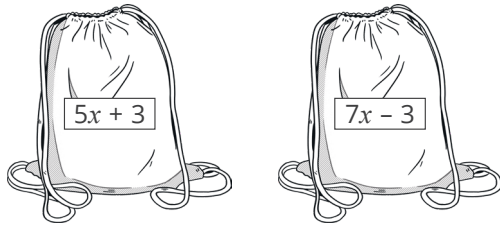
- b. Calculate the input if the output is 9.5. [2 marks]

12. A car travels at an average speed of 42mph. Calculate the total distance the car will travel in 100 minutes. [2 marks]

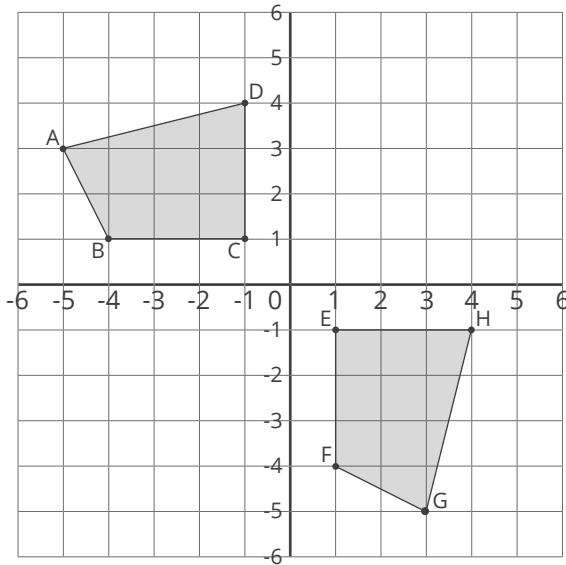
_____ miles

13. Two bags contain the same number of counters. The expressions on the bags give the numbers of counters in terms of x . How many counters does each bag contain?

[3 marks]

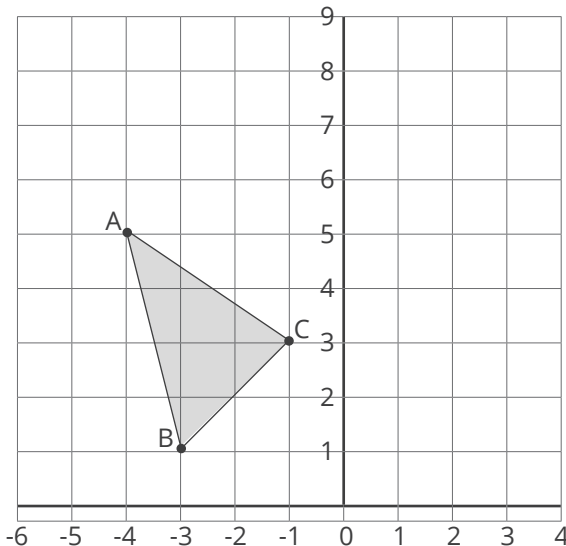


14. a. Describe the single transformation that maps shape ABCD to shape EFGH. [2 marks]



- b. Calculate the area of ABCD. [2 marks]

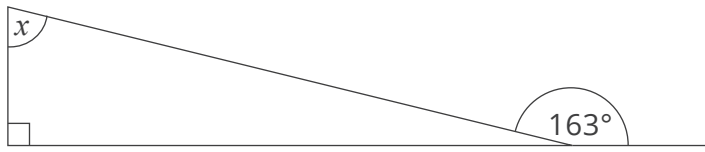
- c. Translate triangle ABC by the vector $\begin{pmatrix} 2 \\ 3 \end{pmatrix}$. [2 marks]



15. a. Calculate the size of angle x .

[2 marks]

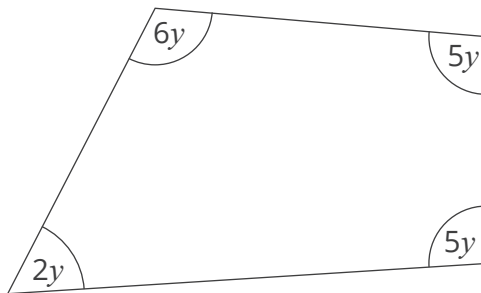
Diagram not drawn accurately.



$x = \underline{\hspace{2cm}}^\circ$

- b. Calculate the value of y .

[2 marks]



$y = \underline{\hspace{2cm}}^\circ$

16. In a local area, the council collects taxes based on the values of people's houses. They split the taxes into 3 bands. Tax bands A, B and C pay taxes in the ratio of: 6:7:8.

- a. If the total amount of tax collected is £525 000, calculate the total amount collected from people in band A. [2 marks]

- b. The council can increase the total taxes by a maximum of 6% each year. Calculate the maximum total tax they could collect next year. [2 marks]

17. Two trains enter a station at 10:10am. Train A is a local train which returns every 15 minutes. Train B is a national train and returns every 40 minutes.

Find the next time they will enter the station at the same time.

[3 marks]
