

Year 9 Spring Assessment

Non-Calculator

Mathematics

Name _____

Date _____

Teacher _____

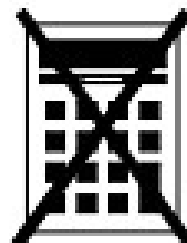
Time allowed 55 minutes

The maximum mark for this paper is **50**



Instructions

- Use a black or blue pen
- Calculator not allowed
- Draw diagrams in pencil
- Answer all questions
- You must answer the questions in the spaces provided
- Do all rough work in this booklet
- Cross through any work you do not want to be marked
- You must keep working until the end of the 55 minutes



Information

- The results of this assessment will be reported back to parents/carers.

Q1.

Circle the length of time between 4.00 pm and 5.05 pm

55 min

65 min

105 min

125 min

(Total 1 mark)

Q2.

A circle has diameter 10 cm

Circle the radius.

5 cm

10 cm

20 cm

100 cm

(Total 1 mark)

Q3.

Simplify fully $8a + 5b + 6a - 2b$

Answer _____

(Total 2 marks)

Q4.

By rounding each number to the nearest 10, estimate the value of 31×18

Answer _____

(Total 3 marks)

Q5.

Divide 32 in the ratio 3 : 5

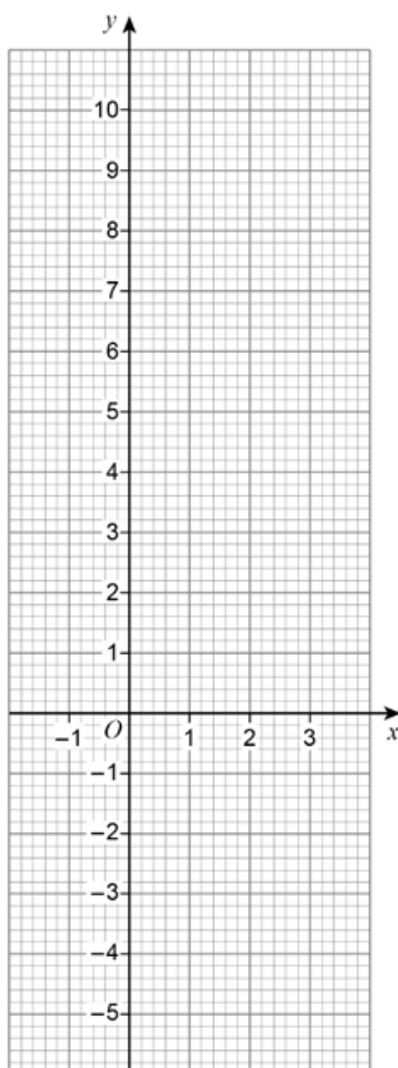
Answer _____ and _____

(Total 3 marks)

Q6.

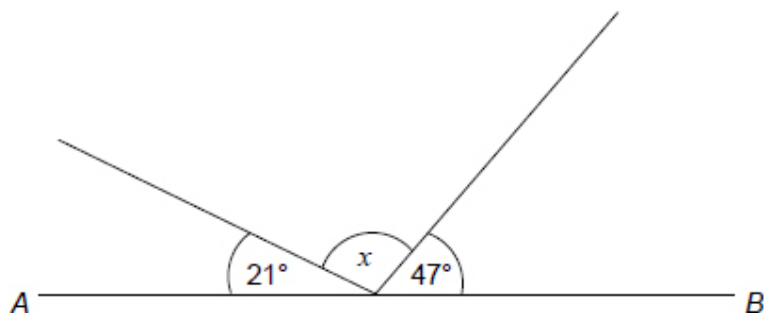
Draw the graph of $y = 3x - 1$ for values of x from -1 to 3

| | | | | | |
|-----|------|-----|-----|-----|-----|
| x | -1 | 0 | 1 | 2 | 3 |
| y | | | | | |



(Total 3 marks)

Q7.



Not drawn accurately

AB is a straight line.

Work out the size of angle x

$x =$ _____^o
(Total 2 marks)

Q8.

Here is a linear sequence.

3 8 13 18

Work out an expression for the n th term of the sequence.

Answer _____
(Total 2 marks)

Q9.

(a) Solve $3x = 12$

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

(1)

(b) Solve $y + 6 = 15$

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

(1)

(c) Solve $\frac{w}{4} = 5$

$w = \underline{\hspace{2cm}}$

(1)

(Total 3 marks)

Q10.

Five integers have:

a mode of 1

a median of 2

a mean of 3

What is the greatest possible range of the five integers?

You **must** show your working.

Answer $\underline{\hspace{2cm}}$

(Total 3 marks)

Q11.

Which of these is the equation of a straight line?

Circle your answer.

$y = 6x^2$

$y = x - 6$

$y = x^2 + 6$

$y = \frac{6}{x}$

(Total 1 mark)

Q12.

Work out $\frac{5}{6} + \frac{3}{7}$

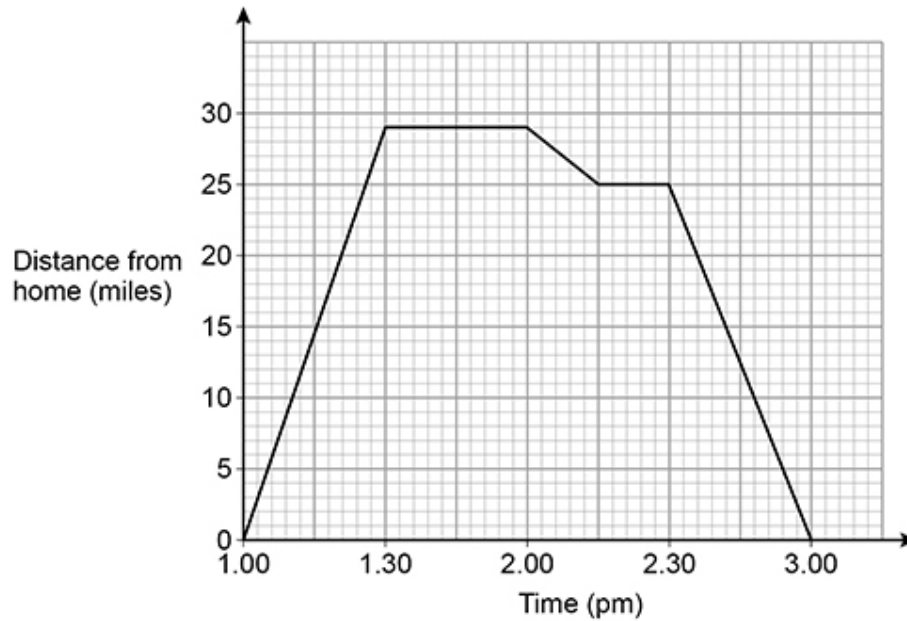
Give your answer as a mixed number.

Answer _____

(Total 3 marks)

Q13.

Here is the distance-time graph for a car between 1 pm and 3 pm



- (a) Work out the **total** time that the car is **not** moving between 1 pm and 3 pm
State the units of your answer.

Answer _____

(2)

- (b) Work out the **total** distance the car travels between 1 pm and 3 pm

Answer _____ miles

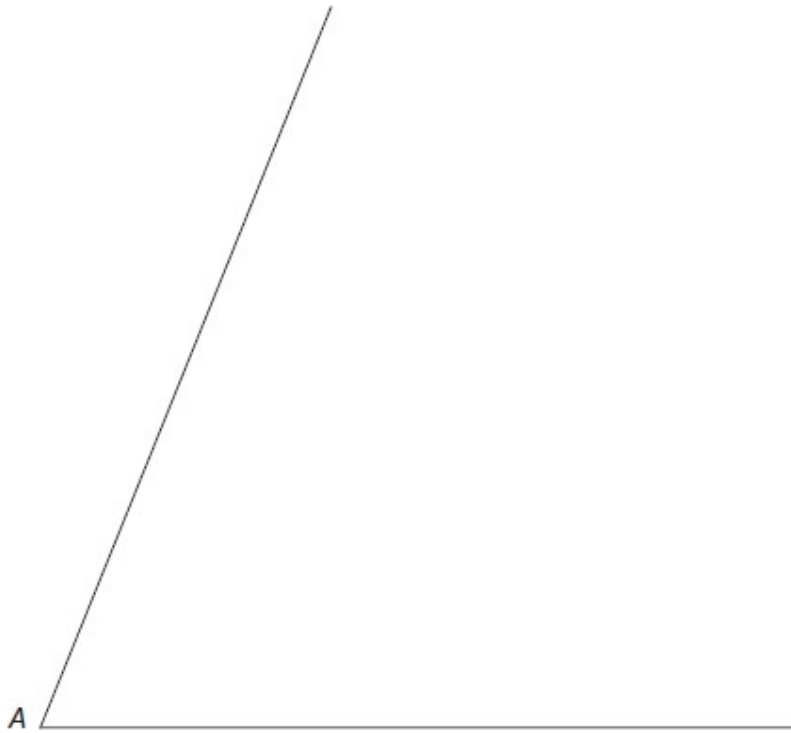
(2)

(Total 4 marks)

Q14.

You will need a ruler and compasses to answer this question.

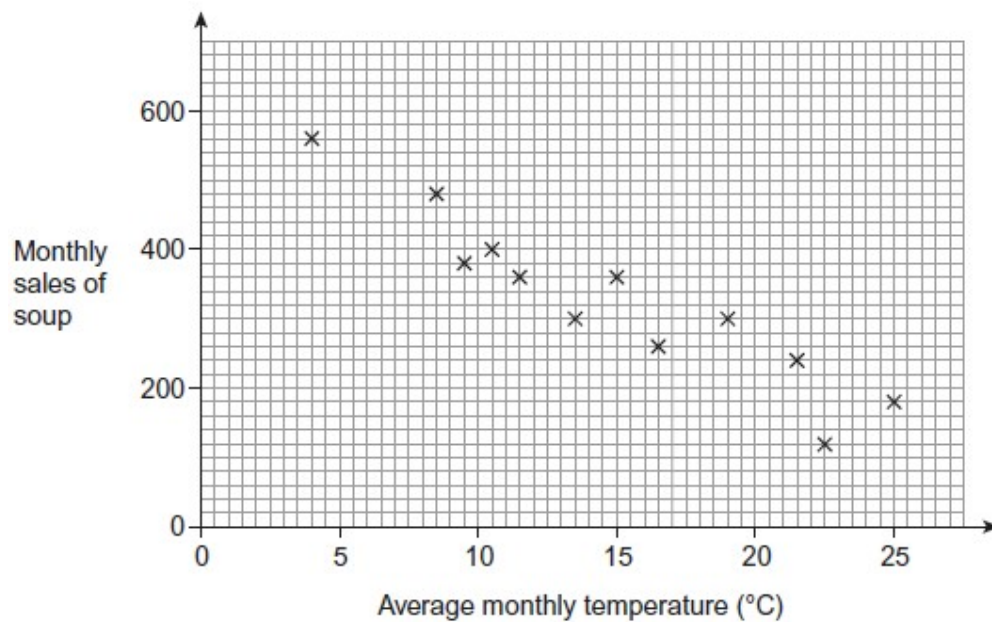
Construct the angle bisector of angle A.



(Total 2 marks)

Q15.

A café owner records the average monthly temperature and the monthly sales of soup over a year.



- (a) The scatter graph shows negative correlation.

Write down the relationship between average monthly temperature and monthly sales of soup.

(1)

- (b) The average monthly temperature for the next month is predicted to be 7°C

Use the graph to estimate the sales of soup that month.
You **must** show your working.

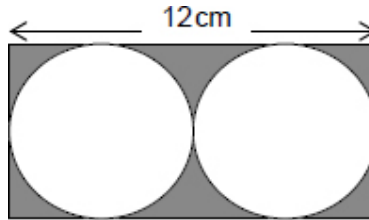
Answer _____

(2)

(Total 3 marks)

Q16.

Two identical circles just fit inside a rectangle as shown.



Not drawn accurately

Work out the area of the shaded section.

Give your answer in terms of π

Answer _____ cm^2
(Total 4 marks)

Q17.

Which of $\frac{2}{5}$ or $\frac{5}{8}$ is closer in value to $\frac{1}{2}$?

You **must** show your working.

Answer _____
(Total 3 marks)

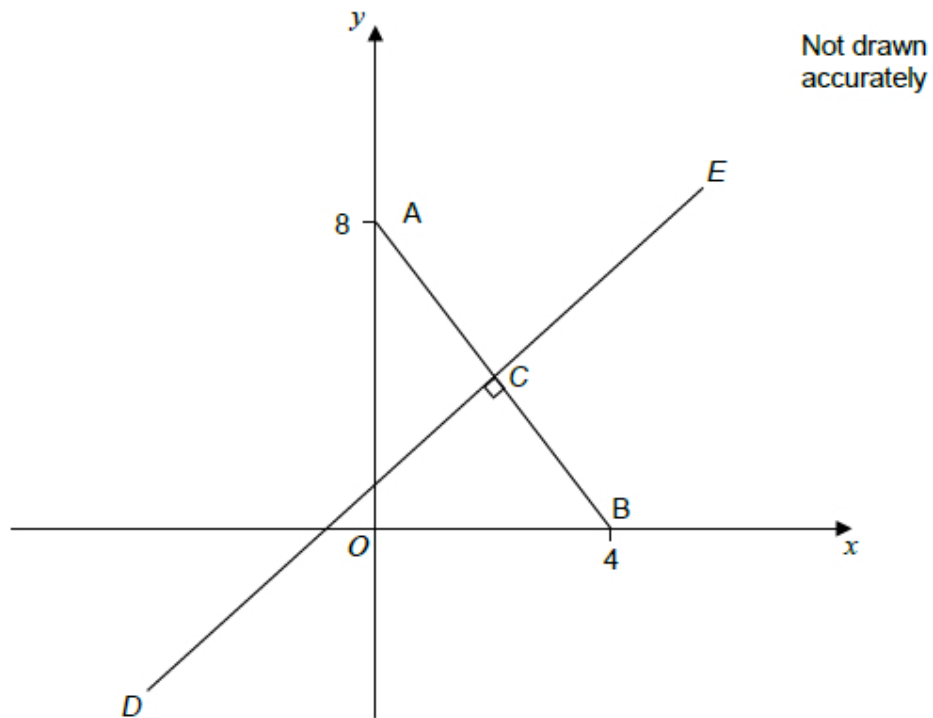
Q18.

ACB is a straight line.

A is the point $(0, 8)$, and B is the point $(4, 0)$

C is the midpoint of AB .

Line DCE is perpendicular to line ACB .



Work out the equation of line DCE .

Answer _____

(Total 5 marks)

Q19.

Written as the product of prime factors,

$$12\,600 = 2^3 \times 3^2 \times 5^2 \times 7$$

and

$$14\,112 = 2^5 \times 3^2 \times 7^2$$

Work out the highest common factor (HCF) of 12 600 and 14 112

Give your answer as an integer.

Answer _____

(Total 2 marks)