Solutions

W/C: 14/05/18

Name...

Teacher...

F

Assessment Week

Year 10 Foundation Tier Maths GCSE

Non-Calculator Paper

Time allowed: 1 Hour

Maximum mark: 54

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1   Circle the decimal which has the same value as $\frac{3}{5} = \frac{6}{10} = 0.6$

$\overset{\times 2}{\frown}$ $\underset{\times 2}{\frown}$

[1 mark]

  0.06   0.35   (0.6)   3.5

2   How many millimetres are there in 7.5 centimetres? $\times 7 \begin{cases} 1CM = 10MM \\ 7.5CM = 75MM \end{cases} \times 7.5$
    Circle your answer.

[1 mark]

  0.75   70.5   (75)   750   7500

3   Which of these shapes has two lines of symmetry?
    Circle your answer.

[1 mark]

  Semicircle   (Rhombus)   Trapezium   Isosceles triangle

4   Circle the number that is 7 less than –12

[1 mark]

  (–19)   –5   5   19

$$-12 - 7 = -19$$

5 (a) Solve $x - 3 = 14$ $(+3)$

[1 mark]

$$x = 17$$

$x =$ _____ $x = 17$_____

5 (b) Solve $5y = 45$ $(\div 5)$

[1 mark]

$$y = 9$$

$y =$ _____ $y = 9$_____

5 (c) Solve $8 + w = 6$ (-8)

[1 mark]

$$W = -2$$

$w =$ _____ $W = -2$_____

6 (a) Work out $9174 \div 11$

[2 marks]

$$11 \overline{) 9174} = 0834$$

Answer _____ 834_____

6 (b) Work out $\dfrac{5}{6} + \dfrac{3}{7}$ Need a common denominator

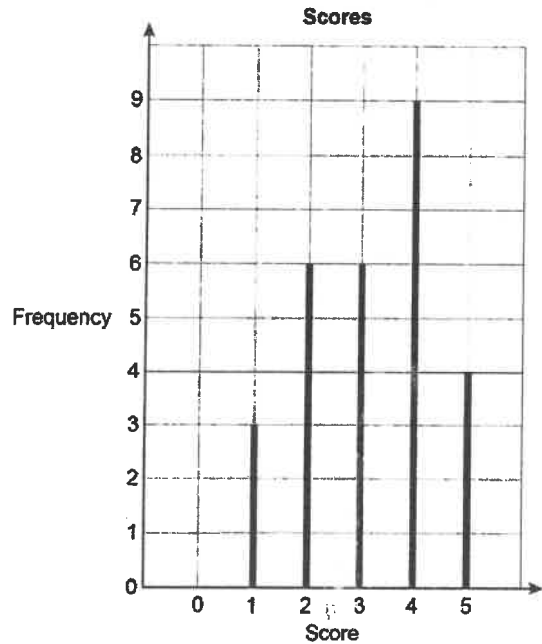Give your answer as a mixed number.

[3 marks]

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

$$\frac{35}{42} + \frac{18}{42} = \frac{53}{42} = 1\frac{11}{42}$$

Answer _____ $1\frac{11}{42}$_____

$$\begin{array}{r} 35 \\ + 18 \\ \hline 53 \end{array}$$

7 The diagram shows the scores given by judges during a television show.

Scores

7 (a) Which score was the mode? ↳ Most common

[1 mark]

Answer ___4___

7 (b) There were 4 judges.

Each judge gave one score in each round.

How many rounds were there?

[3 marks]

$3 + 6 + 6 + 9 + 4 = 28$

$28 \div 4 = 7$

Answer _____

8 A library book was due to be returned on 27 September.

It was actually returned on 14 October.

There is a fine of 8p for every day the book is late.

Work out the total fine.

[3 marks]

$10 \times 8 = 80$

$7 \times 8 = 56$
+
$136p$

September has 30 days.

$3 + 14 = 17$ days late

$17 \times 8 = 136p = £1 \cdot 36$

Answer £ ___1·36___

28   29   30
Sept   Sept   Sept

1   2   3   4   5   6
oct   oct   oct   oct   oct   oct

7   8   9   10   11   12
oct   oct   oct   oct   oct   oct

13   14
oct   oct

9 In a game, three stars are hidden at random.

Each star is behind a different square on this board.

	A	B	C	D	E
1					
2					✗
3					
4					
5					

25 squares

9 (a) A square is chosen at random.

What is the probability that there is a star behind it?

[1 mark]

Answer $\dfrac{3}{25}$

9 (b) In one game, the stars are behind three consecutive squares.

The squares are in one row or one column.

One of the squares is E2

Write down **all** the possible pairs for the other two squares.

[2 marks]

E1 and E3

or// C2 and D2

or// E4 and E3

Answer _____

10 Complete the table to show equivalent fractions and percentages.

[3 marks]

Fraction	Percentage
$\dfrac{1}{2}$	50%
$\dfrac{3}{10}$	30%
$\dfrac{43}{100}$	43%
$\dfrac{5}{2}$	250%

★ $\dfrac{3}{10} = \dfrac{30}{100} = 30\%$

★ $43\% = \dfrac{43}{100}$

A $\dfrac{5}{2} \overset{\times 50}{=} \dfrac{250}{100}$ ×50

11 (a) Cards in a pack are red or blue in the ratio

red : blue = 2 : 3

$2 + 3 = 5$

What fraction of the cards are **red**?
Circle your answer.

[1 mark]

$\frac{5}{6}$ $\frac{2}{3}$ (⃝$\frac{2}{5}$) $\frac{3}{5}$

11 (b) A different pack has 72 cards.

$\frac{5}{9}$ are yellow.

Work out the number of yellow cards.

[2 marks]

$\frac{5}{9}$ of 72

$72 \div 9 = 8$

$8 \times 5 = 40$

Answer ___40___

$9\overline{)7^{7}2}$ = 08

12 (a) How many edges are there on a square-based pyramid?
Circle your answer.

[1 mark]

4 5 (⃝8) 12

12 (b) How many faces of a triangular prism are triangles?
Circle your answer.

[1 mark]

(⃝2) 3 4 5

13 A bus can be early, on time or late.
The probability that the bus is early is 0.1
The probability that the bus is on time is 0.6

Work out the probability that the bus is late.

Probability adds up to 1

[2 marks]

$0.1 + 0.6 = 0.7$

$1 - 0.7 = 0.3$

Answer ___0.3___

14 On the grid, draw the graph of $x + y = 2$ for values of x from -3 to 3

[2 marks]

x	0	1	2
y	2	1	0
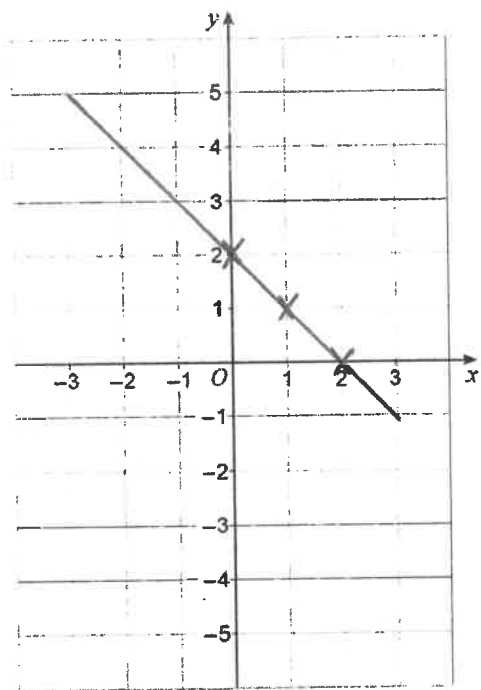
15 5% of a number is 31

1% of the same number is 6.2

Work out 13% of the number.

[3 marks]

$5\% = 31$

$10\% = 62$

$1\% = 6.2$

$3\% = 18.6$

$$6.2$$
$$62$$
$$+\,62$$
$$\overline{18.6}$$

$10\% + 3\% = 13\%$

$62 + 18.6 = 80.6$

$$62$$
$$+\,18.6$$
$$\overline{80.6}$$

Answer _____ 80.6 _____

16 Complete the grid so that when you

multiply the three numbers in any column, row or diagonal the answer is 1

[3 marks]

① $10 \times \frac{1}{2} = 5$

$5 \times \frac{1}{5} = 1$

② $\frac{1}{20} \times 20 = 1$

$1 \times 1 = 1$

①
10	$\frac{1}{5}$	$\frac{1}{2}$	$= 1$
$\frac{1}{20}$	1	20	$= 1$
2	5	$\frac{1}{10}$	$= 1$

②

③

③ $2 \times 5 = 10$

$10 \times \frac{1}{10} = 1$

17 A sequence has three terms.

The term-to-term rule for the sequence is

> multiply by 8 and then add 11

17 (a) The first term of the sequence is –1

Work out the third term.

[2 marks]

① -1

② $-1 \times 8 + 11 = -8 + 11 = 3$

③ $3 \times 8 + 11 = 24 + 11 = 35$

Answer _____ 35 _____

17 (b) The order of the three terms is reversed to make a new sequence.

Work out the term-to-term rule for this sequence.

[1 mark]
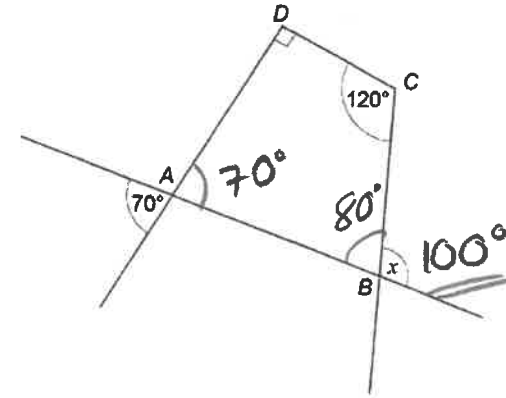
take away 11 and divide by 2.

Answer _____

$\boxed{\times 2} \longrightarrow \boxed{+11}$

$\boxed{\div 2} \longleftarrow \boxed{-11}$

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18 ABCD is a quadrilateral.

Sides are extended as shown.

Not drawn accurately

Show that $x = 100°$

[3 marks]

$70 + 120 + 90 = 280°$

$360 - 280 = 80°$

$180 - 80 = 100°$

✱ angles in a quadrilateral add up to 360°

✱ angles on a straight line add up to 180°

✱ angles that are vertically opposite are the same.

19 Use   2 gallons = 9 litres   to convert 17 gallons into litres.

[3 marks]

1 GALLON = 4.5 LITRES

FOR 16 GALLONS : 2 GALLONS × 8 SO
9 LITRES × 8 = 72 LITRES
THEN ADD ON 1L = 4.5 L
     72.0
  +   4.5
     76.5

Answer _____76.5_____ litres

20 n is an odd number.   1, 3, 5, 7, 9 etc
       p is a prime number.   2, 3, 5 7 11 . . .
       In each part write down possible values of n and p so that

20 (a) $n + p$ is a square number.

[1 mark]

1 + 3 = 4 , 4 IS SQUARE

$n =$ _____1_____ $p =$ _____3_____

20 (b) np is a square number.

[1 mark]

3 × 3 = 9   9 IS SQUARE

$n =$ _____3_____ $p =$ _____3_____

21

$x : y = 7 : 4$

$x + y = 88$

Work out the value of $x - y$

[3 marks]

$x : y$
       ×8 (7 : 4) ×8   7 + 4 = 11) ×8
           56 : 32   88

56 − 32 = 24

Answer _____24_____

END OF QUESTIONS