End of Term Assessment

First Half Term

Full Name: _____

You must show all working. Calculators must not be used.

Total marks 45. Time allocated 75 minutes.

Topics:

Introduction to number

Fractions

Percentages

Ratio

Maps and Scale

Introduction to Algebra

Substitution

Linear equations

Linear inequalities

Circles

1) Mason wants to buy 6 pens.

Each pen costs 28p

Mason pays with a £10 note.

    a)   Work out how much change Mason will get from £10.

£…………………………………….

(2 marks)

b) When in the shop Mason finds out the price of the pens has been reduced.

How does this affect the change he will get?

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(1 mark)

Q2)

Work out the following:

$$\sqrt{121} - (13 - 5 \times 2)^2$$

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(3 marks)

Answer _____

Q3)

Work out the following. Give your answer **as a mixed number**.

$$8\frac{1}{2} + 2\frac{2}{3}$$

(4 marks)

Answer _____

Q4a)

Cards in a pack are red or blue in the ratio

Red : blue = 2 : 3

What fraction of the cards are **red**?

$$\frac{5}{6} \qquad\qquad \frac{2}{3} \qquad\qquad \frac{2}{5} \qquad\qquad \frac{3}{5}$$

(1 mark)

Q4b) A different pack has 72 cards.

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

Work out the number of yellow cards.

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(2 marks)

Q5) Ali and Steve share some sweets in the ratio 2 : 7.

Steve gets 30 more sweets than Ali.

Work out how many sweets Steve gets.

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(3 marks)

Answer _____

Q6) A map has a scale of 1 : 5

The distance between two points on the map is 12 cm.

Work out the real distance between the two points. Give your answer in kilometres.

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(3 marks)

Answer _____

Q7)   10% of 2100 is 210

Work out 43% of 2100

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(3 marks)

Answer _____

Q8)

Simplify the following expressions.

a) $3 \times b \times 9$

(1 mark)

Answer_____

b) $2x - 3y - 6x - 4y$

(1 mark)

Answer_____

c) $7x^2 - 3x + 3x^2 + 6x$

(1 mark)

Answer_____

d) $32xy \div 8xy$

(1 mark)

Answer_____

Q9)

Here is a formula.

$$v = \frac{1}{2}x^2h$$

Work out the value of v when $x = 11$ and $h = 6$

(2 marks)

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Answer_____

Q10 a) Solve $6x - 11 = 13$

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(2 marks)

Answer _____

Q10 b) Solve $8x + 7 = 2(x + 5)$

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(3 marks)

Answer _____

Q11)

a) Show the following inequalities on the number lines.

$$x > 2$$

(1 mark)

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  -3   -2   -1    0    1    2    3    4    5    x
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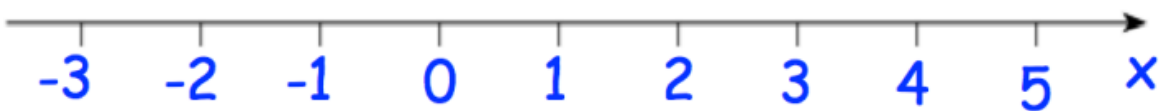
b)

$$x \leq 2$$

(1 mark)

```
  -3   -2   -1    0    1    2    3    4    5    x
```

c)

$$-1 \leq x < 4$$

(1 mark)

```
  -3   -2   -1    0    1    2    3    4    5    x
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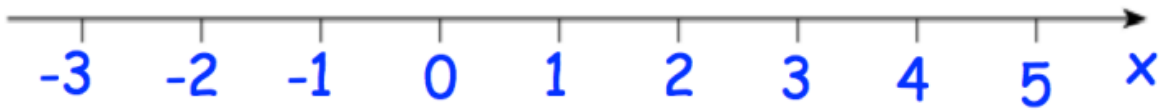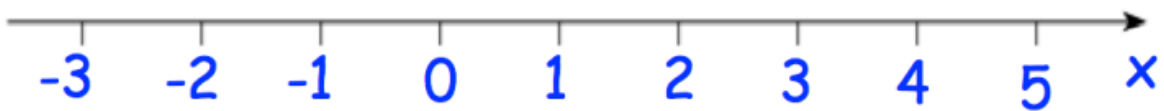
Q12) Solve the inequality

$$7x + 3 > 5x + 10$$

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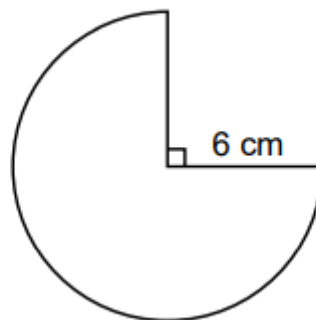
(3 marks)

Answer _____

Q13)

The diagram shows a sector of a circle of radius 6cm.

Calculate the area of the sector.

Give your answer in terms of π

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(4 marks)

Answer _____

END OF TEST