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|---------|-------------|
| NAME    | MARK SCHEME |
| TEACHER |             |

Year 9 Mathematics  
January Assessment 2025

Paper 2  
NON-CALCULATOR

30 minutes

33 marks

Show all your working next to the question



3

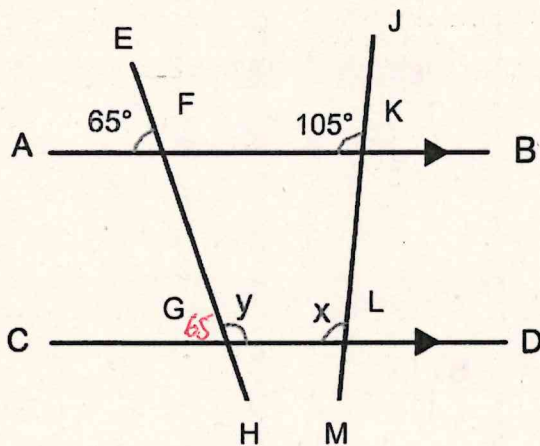
Work out the value of  $(4^{10} \div 4^4) \div (4^2 \times 4)$

[3 marks]

$$\begin{aligned}
 &= 4^6 \div 4^3 && \text{BI either} \\
 &= 4^3 && \text{BI} \\
 &= 16 \times 4 = 40 + 24 = 64
 \end{aligned}$$

Answer 64 BI

4



Lines AB and CD are parallel

(a) Find angle x

Answer: 105 °

(b) Find angle y

$$180 - 65 = 115$$

m1

Answer: 115 °

[3 marks]

5

(a) Solve  $5x + 6 < 2x - 3$ 

[3 marks]

$$3x + 6 < -3$$

M1 (remove x's one side)

$$3x < -9$$

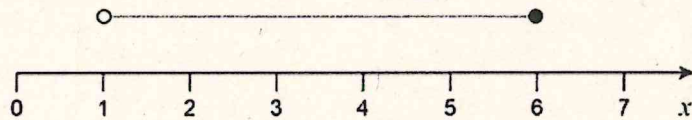
M1 (subtract 6 or  $\div 3$ )

$$x < -3$$

Answer  $x < -3$  A1

(b) Write down the inequality represented by the number line.

[2 marks]



B1 B1

Answer

$$1 < x \leq 6$$

6 Write  $0.\overline{36}$  as a fraction in its lowest terms.

$$\text{let } x = 0.363636 \dots$$

$$100x = 36.363636 \dots \quad \text{B1}$$

$$99x = 36 \quad \text{B1}$$

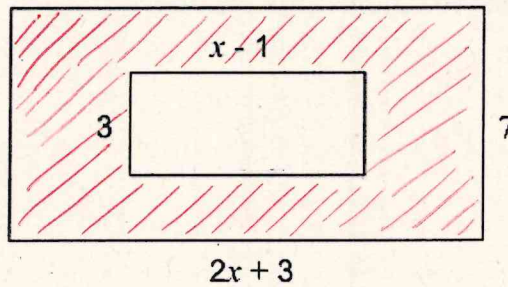
$$x = \frac{36}{99} = \frac{12}{33} = \frac{4}{11} \quad \text{A1}$$

Answer:  $\frac{4}{11}$ 

[3 marks]

7

The diagram shows two rectangles.  
All dimensions are in centimetres.



Not drawn accurately

The shaded area is  $84.5 \text{ cm}^2$

Work out the perimeter of the white rectangle.

[5 marks]

$$\begin{aligned} \text{shaded area} &= 7(2x+3) - 3(x-1) \quad \text{ml} \\ &= 14x + 21 - 3x + 3 \\ &= 11x + 24 \quad \text{Al} \end{aligned}$$

$$\text{so } 11x + 24 = 84.5 \quad \text{ml ft}$$

$$11x = 60.5$$

$$\begin{array}{r} 5.5 \\ 11 \overline{) 60.5} \end{array}$$

$$x = 5.5$$

$$\begin{aligned} \text{so perimeter} &= 3 + 3 + (5.5-1) + (5.5-1) \quad \text{ml} \\ &= 6 + 9 = 15 \end{aligned}$$

↙ their x

Answer

15 cm Al

8 Sally is mixing concrete.

To make concrete she will mix cement, sand and aggregate in the ratio 1 : 5 : 10.

She has 0.6 cubic metres of sand and plenty of cement and aggregate.

Can Sally make 2 cubic metres of concrete?

You must show working to support your answer.

$C : S : A$   
 $1 : 5 : 10$   
 $0.12 : 0.6 : 1.2$  (ml)

$5 \overline{) 0.60}$

$\left. \begin{array}{l} \div 5 \\ \times 2 \end{array} \right\}$

$\text{total} = \overbrace{0.12 + 0.6 + 1.2}^{\text{ml}} = 1.92$

$1.92 < 2$  so NO

} At need 1.92 and NO

Answer: NO

[3 marks]

Rearrange  $y = \frac{2x-1}{4x+5}$  to make  $x$  the subject.

[5 marks]

$y(4x+5) = 2x-1$  ml (x up)

$4yx + 5y = 2x - 1$  ml (expand)

$4yx - 2x = -1 - 5y$  ml (x's on 1 side)

$x(4y-2) = -1 - 5y$  ml (factorise)

$x = \frac{-1-5y}{4y-2}$  oe. A1

Answer  $\frac{-1-5y}{4y-2} = \frac{5y+1}{2-4y} = \frac{5y+1}{2(1-2y)}$

**END OF TEST**