1 (b) Solve $2x + 5 = -19$

$2x + 5 = -19$

$2x = -19 - 5$ $\quad -5$

$2x = -24$

$x = \frac{-24}{2}$ $\quad \div 2$ (1)

$x = -12$ (1)

$x =$ -12

(2)

(Total for Question 1 is 2 marks)

2 (b) Solve $x + 5 = 12$

$x + 5 = 12$

$x = 12 - 5$ (−5)

$= 7$

$x =$ 7 (1)

(1)

(c) Solve $9y = 36$

$9y = 36$

$y = \frac{36}{9}$ (÷9)

$= 4$

$y =$ 4 (1)

(1)

(Total for Question 2 is 2 marks)

3 (a) Solve $5(4 - x) = 7 - 3x$

Show clear algebraic working.

$5(4 - x) = 7 - 3x$

$20 - 5x = 7 - 3x$ (1)

$20 - 7 = -3x + 5x$ (1)

$13 = 2x$

$x = \frac{13}{2} = 6.5$ (1)

$x =$ 6.5

(3)

(Total for Question 3 is 3 marks)

4 (b) Solve $4x + 5 = 27$

$4x + 5 = 27$

$4x = 27 - 5$ (1)

$= 22$

$x = \frac{22}{4} = 5.5$

$x =$ 5.5 (1)

(2)

(Total for Question 4 is 2 marks)

5 (b) Solve $(2x + 5)^2 = (2x + 3)(2x – 1)$

$4x^2 + 20x + 25 = 4x^2 - 2x + 6x - 3$

$4x^2 + 20x + 25 = 4x^2 + 4x - 3$ (1)

$4x^2 - 4x^2 + 20x - 4x + 25 + 3 = 0$

$16x + 28 = 0$

$16x = -28$ (1)

$x = \frac{-28}{16}$

$= -1.75$ (1)

$x =$ -1.75

(3)

(Total for Question 5 is 3 marks)

6 (c) Solve $5x - 11 = x + 6$

Show clear algebraic working.

$5x - 11 = x + 6$

$5x - x = 6 + 11$ (1)

$4x = 17$ (1)

$x = \frac{17}{4}$

$= 4.25$ (1)

$x =$ 4.25

(3)

(Total for Question 6 is 3 marks)

7 Solve $5(2x - 3) = 20$

Show clear algebraic working.

$: 10x - 15 = 20$ (1)

$10x = 20 + 15$

$10x = 35$ (1)

$x = \frac{35}{10}$

$= 3.5$ (1)

$x =$ 3.5

(Total for Question 7 is 3 marks)

8 (b) Solve $2n + 5 = 16$

$2n + 5 = 16$

$2n = 16 - 5$ (1)

$= 11$

$n = \frac{11}{2}$

$n = 5 \cdot 5$ (1)

$n =$ 5.5

(2)

(Total for Question 8 is 2 marks)

9 (b) Solve $4 - 3x = \dfrac{5 - 8x}{4}$

Show clear algebraic working.

$$4 - 3x = \frac{5 - 8x}{4}$$

$$4(4 - 3x) = 5 - 8x \quad (1)$$

$$16 - 12x = 5 - 8x$$

$$16 - 5 = 12x - 8x$$

$$11 = 4x \quad (1)$$

$$x = \frac{11}{4}$$

$$= 2.75 \quad (1)$$

$x =$ 2.75

(3)

(Total for Question 9 is 3 marks)

10 (e) Solve $x - 7 = 19$

$x - 7 = 19$

$x = 19 + 7 = 26$

$x =$ 26 (1)

(1)

$18^2 + 15^2 - 5^3 = 4n$

(f) Work out the value of n.

$18^2 + 15^2 - 5^3 = 4n$

$424 = 4n$ (1)

$n = 424 \div 4$

$n = 106$

$n =$ 106 (1)

(2)

(Total for Question 10 is 3 marks)

11 (a) Solve $p = \dfrac{3p - 5}{10}$

Show clear algebraic working.

$(10)p = 3p - 5$ (1)

$10p - 3p = -5$ (1)

$7p = -5$

$p = \dfrac{-5}{7}$ (1)

$p =$ $-\dfrac{5}{7}$

(3)

(Total for Question 11 is 3 marks)

12(c) Solve $\frac{c}{3} = 9$

$c = 9(3)$

$= 27$

$c =$ 27 (1)

(1)

(Total for Question 12 is 1 marks)

13 (c) Solve $4p + 9 = 24$

$4p = 24 - 9$ (1)

$p = \frac{15}{4}$ (1)

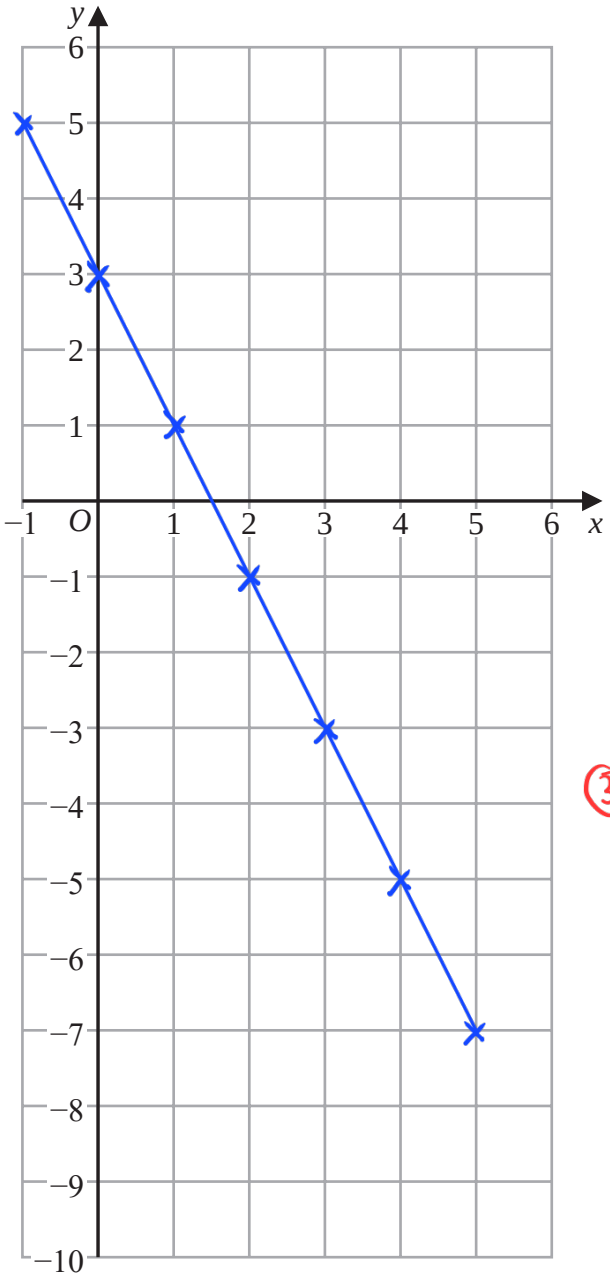
$p =$ $\frac{15}{4}$

(2)

(Total for Question 13 is 2 marks)

14 On the grid, draw the graph of $y = -2x + 3$ for values of x from -1 to 5

x	-1	0	1	2	3	4	5
y	5	3	1	-1	-3	-5	-7



3

(Total for Question 14 is 3 marks)

15 (b) Solve $2x - 3 = \frac{3x - 5}{4}$

Show clear algebraic working.

$8x - 12 = 3x - 5$ (1)

$5x = 7$ (1)

$x = \frac{7}{5}$ (1)

$x =$ $\frac{7}{5}$

(3)

(Total for Question 15 is 3 marks)

16 3 cups each contain 200 millilitres of water.
4 jugs each contain x millilitres of water.

Emma pours all the water from the 3 cups and the 4 jugs into a container.
The total amount of water that Emma pours into the container from the 3 cups and 4 jugs is 3.5 litres.

Work out the value of x

$3 \times 200 + 4 \times x = 3500$ (1)

(1)

$600 + 4x = 3500$

$4x = 2900$

$x = \frac{2900}{4}$ (1)

$= 725$ (1)

$x =$ 725

(Total for Question 16 is 4 marks)

17 Larry is a delivery man.

He has 7 parcels to deliver.
The mean weight of the 7 parcels is 2.7 kg

Larry delivers 3 of the parcels.
Each of these 3 parcels has a weight of W kg

The mean weight of the other 4 parcels is 3.3 kg

Work out the value of W

$7 \times 2.7 = 18.9$ (1)

$4 \times 3.3 = 13.2$

$3W = 18.9 - 13.2$

$3W = 5.7$ (1)

$W = \frac{5.7}{3}$

$= 1.9$ (1)

$W =$ 1.9

(Total for Question 17 is 3 marks)

18 (c) Solve $5r - 3 = 8$

$5r = 11$ (1)

$r = \frac{11}{5} = 2.2$ (1)

$r =$ 2.2

(2)

(Total for Question 18 is 2 marks)

19 (a) Solve $5c = 15$

$c = \frac{15}{5} = 3$ (1)

$c =$ 3

(1)

(Total for Question 19 is 1 marks)

20 (b) Solve $6x - 5 = \frac{4x - 7}{2}$

Show clear algebraic working.

$2(6x - 5) = 4x - 7$ (1)

$12x - 10 = 4x - 7$

$12x - 4x = -7 + 10$ (1)

$8x = 3$

$x = \frac{3}{8}$ (1)

$x =$ $\frac{3}{8}$

(3)

(Total for Question 20 is 3 marks)

21 (a) Solve $5x = 30$

$x = \frac{30}{5} = 6$

$x =$ 6 (1)

(1)

(b) Solve $y - 7 = 12$

$y = 12 + 7$

$= 19$

$y =$ 19 (1)

(1)

(Total for Question 21 is 2 marks)

22 (c) Solve $7x = 42$

$x = \frac{42}{7} = 6$

$x =$ 6 (1)

(1)

(d) Solve $n + 6 = 5$

$n = 5 - 6$

$= -1$

$n =$ -1 (1)

(1)

(Total for Question 22 is 2 marks)

23 (d) Solve $7g + 3 = 2g - 5$

Show clear algebraic working.

$7g - 2g = -5 - 3$ (1)

$5g = -8$ (1)

$g = -\frac{8}{5}$ (1)

$g =$ $-\frac{8}{5}$

(3)

(Total for Question 23 is 3 marks)

24 (c) Solve $2d + 7 = 16$

$2d = 9$ (1)

$d = \frac{9}{2}$

$d = 4.5$ (1)

$d =$ 4.5

(2)

(Total for Question 24 is 2 marks)

25 Solve $3(2 - 4x) = 5 - 8x$
Show clear algebraic working.

$6 - 12x = 5 - 8x$ (1)

$6 - 5 = -8x + 12x$ (1)

$1 = 4x$

$x = \frac{1}{4}$ (1)

$x =$ $\frac{1}{4}$

(Total for Question 25 is 3 marks)

26 (b) Solve $5 + x = 12$

$x = 12 - 5$
$= 7$

$x =$ 7 (1)

(1)

(c) Solve $\frac{y}{6} = 3$

$y = 3(6)$
$= 18$

$y =$ 18 (1)

(1)

(Total for Question 26 is 2 marks)

27 The diagram shows rectangle *ABCD*

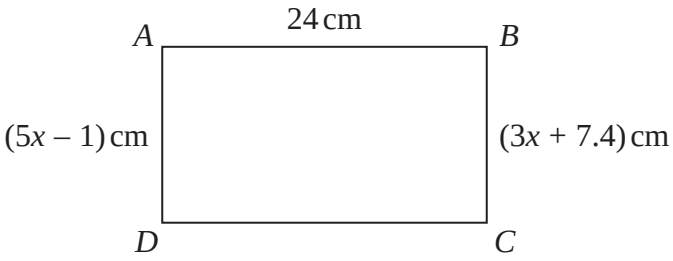


Diagram **NOT** accurately drawn

Work out the perimeter of the rectangle.
Show your working clearly.

$5x - 1 = 3x + 7.4$ (1)

$2x = 8.4$

$x = 4.2$ (1)

Perimeter $= 24 + 24 + 5(4.2) - 1 + 3(4.2) + 7.4$ (1)

$= 24 + 24 + 20 + 20$

$= 88$ (1)

88 ..... cm

(Total for Question 27 is 4 marks)

28 (c) Solve $4x - 7 = 23$

$4x = 30$ (1)

$x = \frac{30}{4} = 7.5$ (1)

$x =$ 7.5

(2)

(Total for Question 28 is 2 marks)

29 (c) Solve $13 - x = 7$

$x = 13 - 7$
$= 6$ (1)

$x =$ 6

(1)

(d) Solve $4y + 7 = 43$

$4y = 43 - 7$ (1)
$4y = 36$
$y = \frac{36}{4} = 9$ (1)

$y =$ 9

(2)

(Total for Question 29 is 3 marks)

30 *ABCD* is a trapezium.

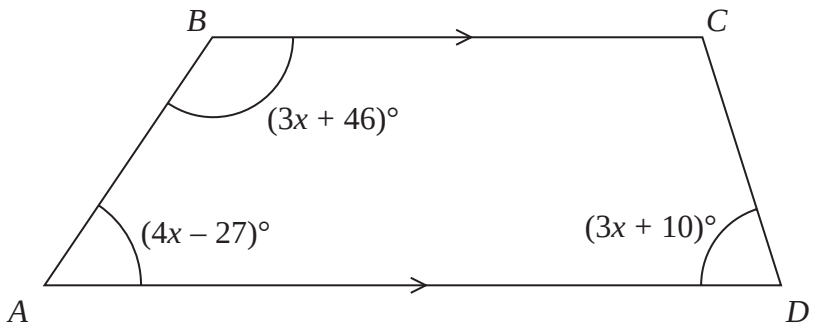


Diagram **NOT** accurately drawn

BC is parallel to *AD*

Find the size of the largest angle inside the trapezium.

$(4x - 27) + (3x + 46) = 180$ (1)

$7x = 180 - 19$

$7x = 161$

$x = 23$ (1)

$ABC = 3(23) + 46 = 115$

$BAD = 4(23) - 27 = 65$ (1)

$ADC = 3(23) + 10 = 79$

$BCD = 180 - 79 = 101$

(1) 115 °

(Total for Question 30 is 4 marks)