1 Here are two inequalities.

$$-2 \leqslant x \leqslant 3$$

$$9 \leqslant x + y \leqslant 11$$

x and y are integers.

Work out the **greatest** possible value of $y - x$

[3 marks]

To get greatest possible value of $y-x$,

y should be the largest and x should be the smallest.

Hence, $x = -2$ (1)

$x + y \leq 11$

$-2 + y < 11$

$y < 13$ (1)

$y - x = 13 - (-2)$

$= 15$ (1)

Answer 15

2 (a) Solve $5x + 6 > 3x + 15$

[3 marks]

$5x - 3x > 15 - 6$ (1)

$2x > 9$ (1)

$x > \frac{9}{2}$ (1)

Answer $x > \frac{9}{2}$

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

[2 marks]

Answer $2 \leq x < 5$ (2)

3 $m^2 > 9$

Circle the possible value of m.

[1 mark]

$-2\frac{7}{8}$ 2.8 3 $-\frac{7}{2}$

4 Circle the inequality represented by the diagram.

[1 mark]

$-5 < x < 1$ $-5 < x \leqslant 1$ $-5 \leqslant x < 1$ $5 \leqslant x \leqslant 1$

1

5 Solve $2x < 26$

[1 mark]

$2x < 26$

$x < 13$

Answer $x < 13$ (1)

6 (a) $a \times 10^n$ is a number in standard form.

Complete the inequality for the value of a.

[1 mark]

1 $\leqslant a <$ 10 (1)

7 $6 < \sqrt[3]{x} < 7$

Circle the possible value of x.

[1 mark]

1.9 20 45 290

1

8 Work out all the **integer** values of x for which $12 \leqslant 4x < 25$

[2 marks]

$12 \leqslant 4x$ $\quad$ $4x < 25$

$3 \leqslant x$ (1) $\quad$ $x < \frac{25}{4}$

$3 \leqslant x < 6.25$

3, 4, 5, 6 (1)

Answer 3 4 5 6

9 $30 < x < 300$

x is 200% of y

Circle the correct inequality.

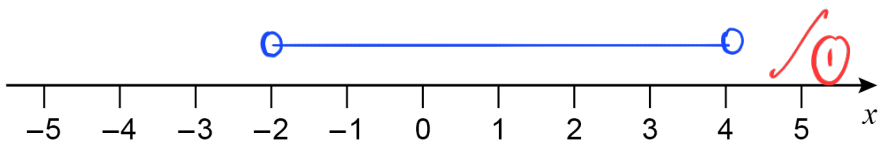
[1 mark]

$10 < y < 100$ $15 < y < 150$ $60 < y < 600$ $90 < y < 900$

1

10 (a) Represent $-2 < x < 4$ on the number line.

[1 mark]



✓1

10 (b) Solve $5y + 14 \geqslant 11$

[2 marks]

$5y \geqslant 11 - 14$ ✓1

$5y \geqslant -3$

$y \geqslant \frac{-3}{5}$ ✓1

Answer $y \geqslant -\frac{3}{5}$