Mathematics

Solving Inequalities
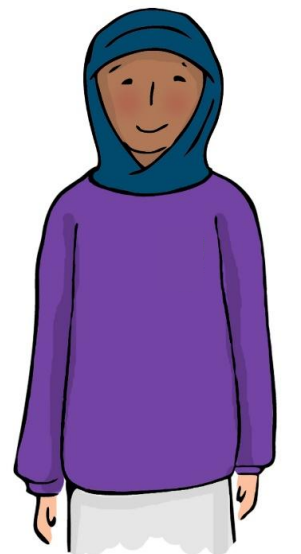
Downloadable Resource

Mr Millar

Try this

What different integer values could x have?

$$13 \geq 4 + 3x$$

I can see that the inequality is true if x = ...

Independent task

Solve the following inequalities

$$4x + 7 \leq 27$$

$$1 > \frac{1}{2} + \frac{x}{10}$$

$$x + 8 < 3x - 10$$

Explore

If $a = 5$, how many different ways can you use the expression cards to complete the inequality frame? What if $a = 10$? What if $a = 100$?

$$2a - 5 \qquad 5 - a \qquad 10 + a \qquad a + 5$$

$$\boxed{} + \boxed{} > \boxed{} + \boxed{}$$

Answers

Try this

What different integer values could x have?

$$13 \geq 4 + 3x$$

I can see that the inequality is true if x =..

You could try out different integers eg, 2 works, 3 works, but not 4 or 5.
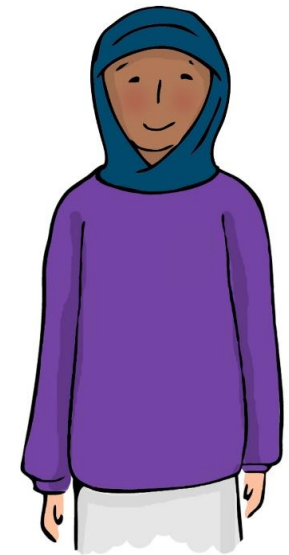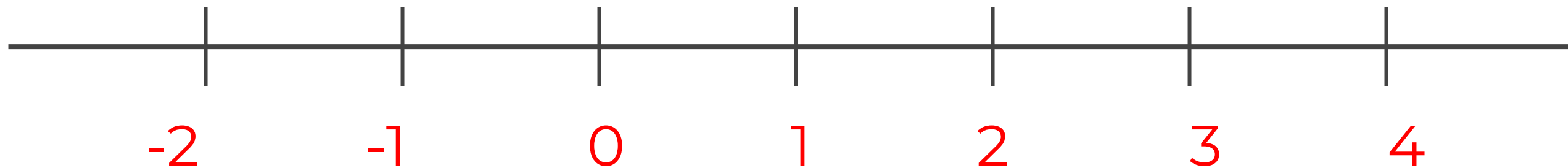
We could also solve the inequality

$13 \geq 4 + 3x$

$9 \geq 3x$

$3 \geq x$

Works for all values 3 or less

Doesn't work for all values more than 3

-2   -1   0   1   2   3   4

Try this

Solve the following inequalities

$$4x + 7 \leq 27$$

$$1 > \frac{1}{2} + \frac{x}{10}$$

$$x + 8 < 3x - 10$$

$$4x \leq 20$$
$$x \leq 5$$

$$\frac{1}{2} > \frac{x}{10}$$

$$10 > x$$

$$8 < 2x - 10$$
$$18 < 2x$$
$$9 < x$$

Try this

If $a = 5$, how many different ways can you use the expression cards to complete the inequality frame? What if $a = 10$? What if $a = 100$?

$$5 - a$$

$$a + 5$$

$$2a - 5$$

$$10 + a$$

[ ] + [ ] > [ ] + [ ]

2 different ways to complete if a = 5 (10 +a and a + 5, or 10 + a and 2a – 5 on the left)

3 different ways to complete if a = 10 or 100 (10 +a and a + 5, or 10 + a and 2a – 5, or a + 5 and 2a – 5 on the left)