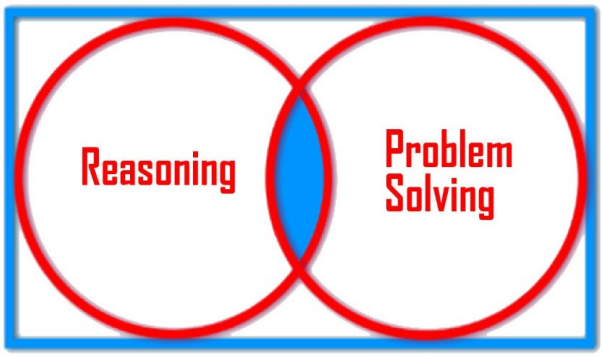
Bridging the Gap

GCSE to A – Level Transition



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Linear Equations and Inequalities

Answers

1

Solve the following equations

a) $2x + 3(x + 5) = -11$

b) $5(x + 2) + 2(x - 8) = 20$

c) $6x + 7 = 3(5 + 3x) + 3x$

d) $5x - 3(7 - x) = 6(11 - 2x) + 11$

Answers

a) $\boldsymbol{x = -\frac{26}{5}}$ **or 5.2**

b) $\boldsymbol{x = \frac{26}{7}}$

c) $\boldsymbol{x = -\frac{4}{3}}$

d) $\boldsymbol{x = \frac{49}{10} = 4.9}$

2

Solve the following inequalities and show your answer on a number line

a) $2x + 4 > x - 7$

b) $6 - 5x \leq 2x + 20$

c) $-3(3 - 5x) < 5 + 4(x + 6)$

d) $4x + 5(3x + 7) \geq -4$

Answers

a) $\boldsymbol{x > -11}$

b) $\boldsymbol{x \geq -2}$

c) $\boldsymbol{x < \frac{38}{11}}$

d) $\boldsymbol{x \geq -\frac{39}{9}}$

3

Solve the following inequalities

a) $-1 < 3x + 5 < 20$

b) $-15 \leq 5(3x - 2) < 65$

c) $5 < \frac{2x+3}{5} < 11$

d) $-1 < \frac{5(7-2x)}{3} \leq 8$

Answers

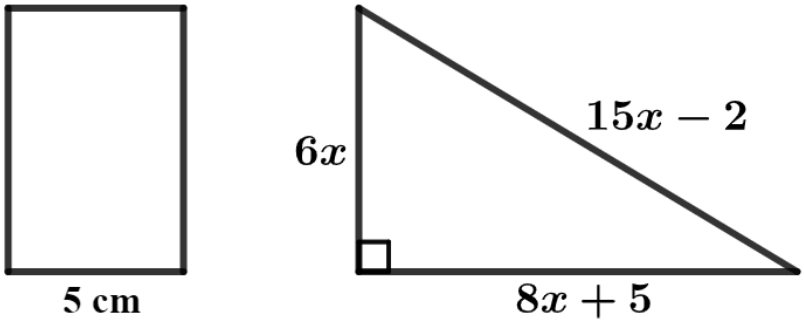
a) $\boldsymbol{-2 \leq x < 5}$

b) $\boldsymbol{-\frac{1}{3} < x < 5}$

c) $\boldsymbol{11 \leq x < 2}$

d) $\boldsymbol{3.8 > x \geq 1.1}$

4 A rectangle and a right-angled triangle are shown below.
The two shapes have the same perimeter

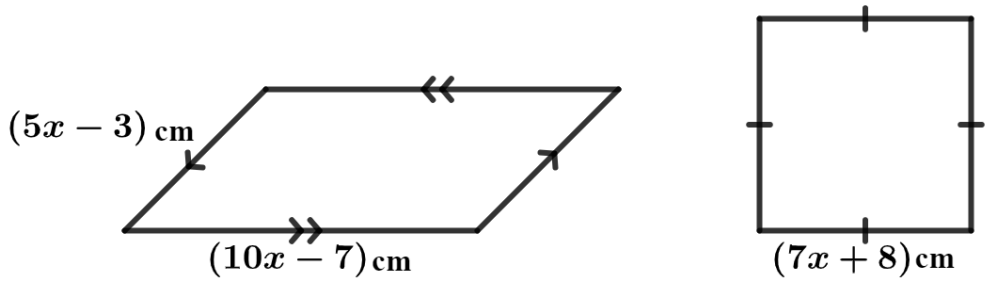


If the area of the rectangle is 360 cm^2, calculate the value of x exactly.

Answers

$$x = \frac{21}{29}$$

5 A parallelogram and a square are shown below.



What is the least integer value of x for which the perimeter of the parallelogram is larger than the perimeter of the square?

Answers

$x > 26$

Therefore the least integer value is 27