

$$(x+5)^2 + (x-2)^2 = 13^2$$

$$x^2 + 10x + 25 + x^2 - 4x + 4 = 169$$

$$2x^2 + 6x + 29 = 169$$

$$2x^2 + 6x - 140 = 0$$

$$x^2 + 3x - 70 = 0$$

Find x
= 169

$$(x+10)(x-7) = 0$$

$$x = -10 \quad \boxed{x = 7}$$

Solve $\frac{(4x+3)(x+2)}{x+1} = 3$

$$(4x+3)(x+2) = 3(x+1)$$

$$4x^2 + 8x + 3x + 6 = 3x + 3$$

$$4x^2 + 11x + 6 = 3x + 3$$

$$4x^2 + 8x + 3 = 0$$

$$(2x+1)(2x+3) = 0$$

$$x = -0.5 \quad x = -1.5$$

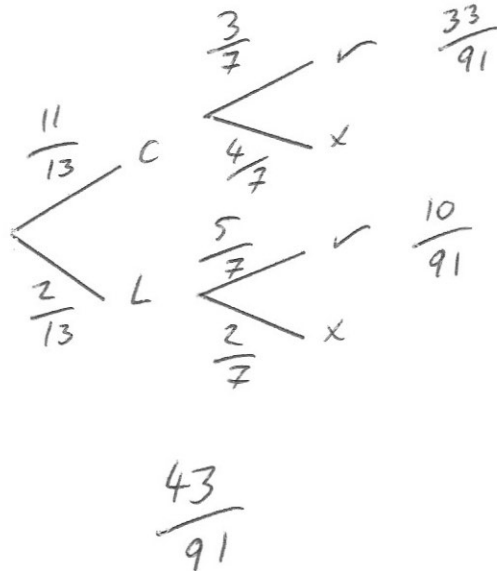
Grace makes chocolate and lemon cupcakes in the ratio 11:2.

Some of the cupcakes have sprinkles and the rest do not.

The ratio of chocolate cupcakes with sprinkles to without sprinkles is 3:4

The ratio of lemon cupcakes with sprinkles to without sprinkles is 5:2

Work out what fraction of the cupcakes have sprinkles.



Peter has 18 pieces of fruit in a bowl.

There are 9 apples, 6 oranges and 3 bananas.

He picks at random three pieces of fruit from the bowl.

$$\frac{237}{272}$$

Work out the probability that the three pieces of fruit are not the same type.

$$P(AAA) = \frac{9}{18} \times \frac{8}{17} \times \frac{7}{16} = \frac{7}{68}$$

$$P(OOO) = \frac{6}{18} \times \frac{5}{17} \times \frac{4}{16} = \frac{5}{204}$$

$$P(BBB) = \frac{3}{18} \times \frac{2}{17} \times \frac{1}{16} = \frac{1}{816}$$

$$\frac{35}{272}$$

$$1 - \frac{35}{272} = \frac{237}{272}$$