



Nathanael has two containers that are mathematically similar.
 The large container is 40cm tall.
 The smaller container is 16cm tall.
 Nathanael says the smaller container holds 40% of the amount that the larger container holds.

Is he correct?
 Explain your answer.

$\frac{16}{40} = \frac{2}{5}$ No, it holds 6.4% of the amount.
 $100 \times \left(\frac{2}{5}\right)^3 = 6.4$

Solve, giving your answers to one decimal place.

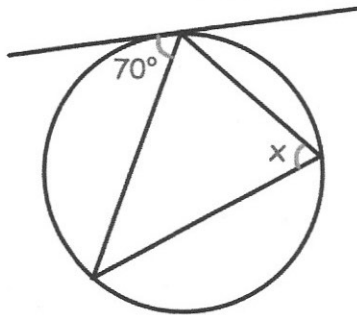
$2x^2 = 9x + 40$

$2x^2 - 9x - 40 = 0$
 $a = 2 \quad b = -9$
 $c = -40$

$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$

$x = \frac{9 \pm \sqrt{81 - (-320)}}{4}$

$x = 7.3 \quad \text{or} \quad x = -2.8$



Find x
 Give a reason for your answer.

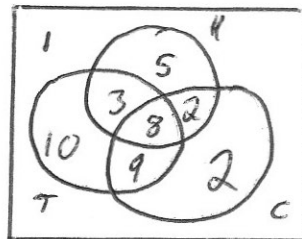
70°
 Alternate segment theorem

Jenna asked 40 people which drink they liked from hot chocolate, tea and coffee.

- 39 people liked at least one of the drinks
- 8 people liked all three drinks
- 3 people liked tea and hot chocolate but not coffee.
- 29 people liked coffee or hot chocolate (or both).
- 34 people liked tea or coffee (or both).
- 18 people liked hot chocolate.
- 2 people liked only coffee.

Jenna picks one person at random from the 40 people.

Work out the probability that this person likes tea.



$\frac{30}{40} = \frac{3}{4}$

Given that the person selected likes tea, find the probability that this person likes both coffee and hot chocolate.

$\frac{8}{30} = \frac{4}{15}$