Revising for Grade 6 in Mathematics

Session 16

Quick Quiz

(1) Multiply out and simplify:

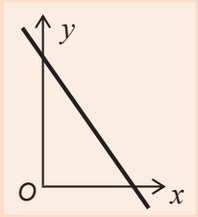
$$(\sqrt{7} - 2)(\sqrt{7} + 2)$$

(2) $c = 14$ and $d = 20$, both to the nearest whole number. What is the lower bound for $d - c$?

(3) Solve these simultaneous equations:

$$2x + y = 2$$
$$3x - y = 13$$

(4) Which of these could not be an equation of this straight line?



$y = -2x + 5$

$5x + 2y = 8$

$x - 2y = 1$

(5) Solve the equation $\frac{x}{2} + \frac{5x}{6} = 40$

Review of Session 15

(1) Work out the exact values of these:

(a) 3^{-2} *(b)* $16^{\frac{1}{2}}$ *(c)* $1{,}000^{\frac{1}{3}}$

(2) Write these expressions using fractional indices:

(a) $\sqrt{n}$ *(b)* $\sqrt[3]{p}$ *(c)* $6\sqrt[5]{x}$

(3) Work out the values of these:

(a) $64^{\frac{1}{2}}$ *(b)* $25^{\frac{3}{2}}$ *(c)* $81^{\frac{3}{4}}$

(4) Work out the value of n in each of these:

(a) $2^n = \frac{1}{8}$ *(b)* $36^n = 6$

(c) $9^n = 27$ *(d)* $16^n = 32$

(5) Work these out as fractions:

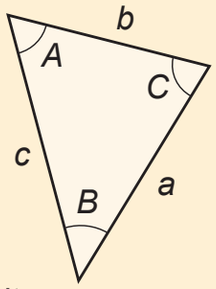
(a) $\left(\frac{2}{3}\right)^2$ *(b)* $\left(\frac{9}{16}\right)^{\frac{1}{2}}$ *(c)* $\left(\frac{64}{125}\right)^{\frac{1}{3}}$

The focus for today's session is …

The Sine Rule

Reminder

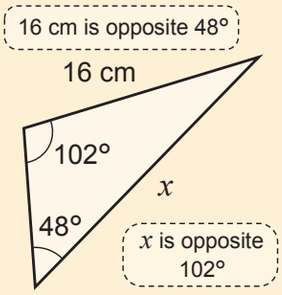
The Sine Rule works in **any triangle**.



$$\frac{a}{\sin A} = \frac{b}{\sin B} = \frac{c}{\sin C}$$

Notice that side a is opposite angle A, and so on.

To use the rule, identify sides and angles that are opposite each other.



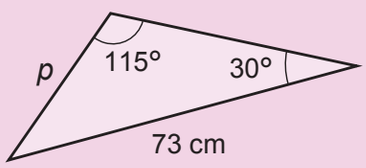
$$\frac{x}{\sin(102)} = \frac{16}{\sin(48)}$$

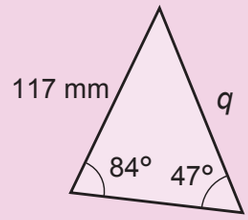
$$x = \frac{16}{\sin(48)} \times \sin(102)$$

$x = 21.1$ cm (3 s.f.)

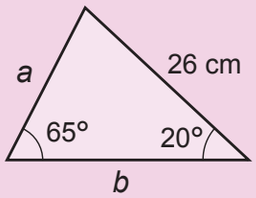
Practice Questions

(1) Calculate the lengths p and q in these triangles, correct to 3 s.f.





(2) Calculate the lengths a and b in this triangle, correct to 3 s.f.



(3) Calculate the length w.