Trig Unit - Prerequisite Skills

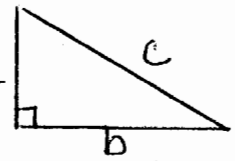
1) Solving Equations with x^2

eg. $x^2 = 49$
$x = \sqrt{49}$
$x = \pm 7$

if you know x represents a length (like a side of a triangle) then you can give +ve answer.

eg. $x^2 - 7^2 = 24^2$
$x^2 - 49 = 576$
$x^2 = 576 + 49$
$x^2 = 625$
$x = \sqrt{625}$
$x = \pm 25$

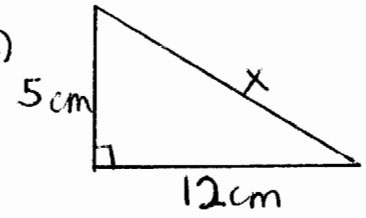
2) Pythagorean Theorem



$a^2 + b^2 = c^2$

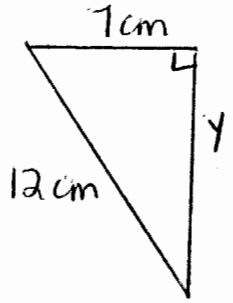
Solve for the missing side:

(a)



$x^2 = 5^2 + 12^2$
$x^2 = 25 + 144$
$x^2 = 169$
$x = \sqrt{169}$
$x = 13\text{ cm}$

(b)



$7^2 + y^2 = 12^2$
$y^2 = 12^2 - 7^2$
$y^2 = 144 - 49$
$y^2 = 95$
$y = \sqrt{95}$
$y \doteq 9.7\text{ cm}$

3) Ratios and Proportions

a) Express in lowest terms:

$21:35$
$= 3:5$

$16:20$
$= 4:5$

b) Solve:

i) $\frac{x}{8} = \frac{16}{20}$

$(20)(x) = (16)(8)$

$x = \frac{128}{20}$

$x = 6.4$

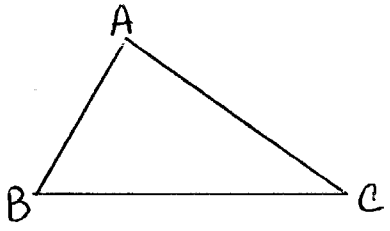
ii) $\frac{9}{b} = \frac{15}{40}$

$(15)(b) = (9)(40)$

$b = \frac{360}{15}$

$b = 24$

4) Angle Sums in a Triangle

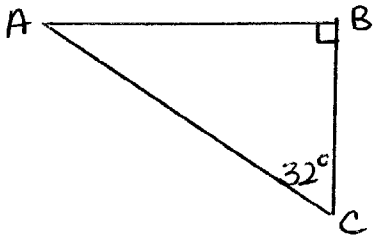


* the three angles in any triangle always add to 180°

$\angle A + \angle B + \angle C = 180°$

Eg. Solve for the missing angles:

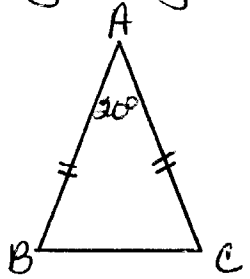
a)



$\angle A = 180 - 90 - 32$

$\angle A = 58°$

b)



$\angle B = \angle C$ since the triangle is isosceles.

$\angle B = \frac{180 - 30}{2} = 80°$

HW pg 4-5 #1-10