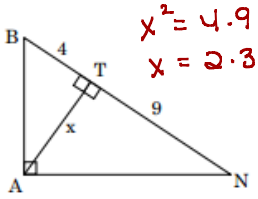
Note Title 2/12/2015

Find the missing value "x" below:

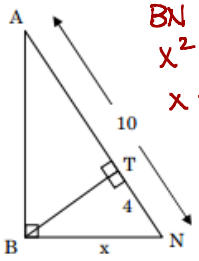
2)



$x^2 = 4 \cdot 9$

$x = 2 \cdot 3 = 6$

3)



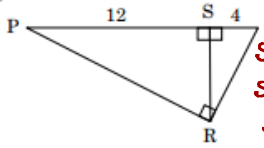
$BN^2 = TN \cdot AN$

$x^2 = 4 \cdot 10$

$x = 2\sqrt{10}$

For 4-6 find the length of the altitude of right triangle PQR.

4)

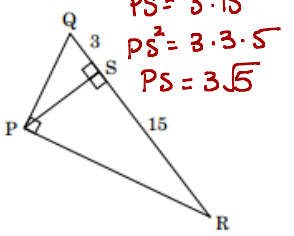


$SR^2 = 12 \cdot 4$

$SR^2 = 3 \cdot 4 \cdot 4$

$SR = 4\sqrt{3}$

5)



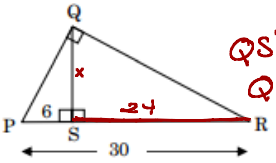
$PS^2 = 3 \cdot 15$

$PS^2 = 3 \cdot 3 \cdot 5$

$PS = 3\sqrt{5}$

$alt^2 = (part)(part)$

6)



$QS^2 = 6 \cdot 24$

$QS^2 = 6 \cdot 6 \cdot 2 \cdot 2$

$QS = 12$

$QS^2 = 6 \cdot 24$

$QS = \sqrt{6 \cdot 6 \cdot 4}$

$QS = \sqrt{36} \cdot \sqrt{4}$

$QS = 6 \cdot 2$

$= 12$

ext/mean = mean/ext

Find the geometric mean of the following numbers.

7) 5 and 8

$\frac{5}{x} = \frac{x}{8}$

$x^2 = 40$

$x = 2\sqrt{10}$

8) 7 and 11

$\frac{7}{x} = \frac{x}{11}$

$x^2 = 77$

$x = \sqrt{77}$

9) 4 and 9

$\frac{4}{x} = \frac{x}{9}$

$x^2 = 36$

$x = 6$

10) 2 and 25

$\frac{2}{x} = \frac{x}{25}$

$x^2 = 50$

$x = \sqrt{2} \cdot \sqrt{25}$ → $x = 5\sqrt{2}$

11) 6 and 8

$x^2 = 48$

$x^2 = 4 \cdot 4 \cdot 3$

$x = 4\sqrt{3}$

12) 8 and 32

$\frac{8}{x} = \frac{x}{32}$

$x^2 = 256$

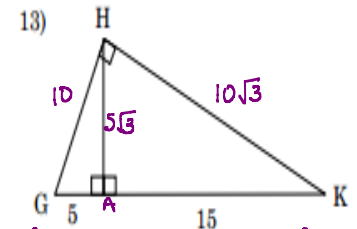
$x = 16$

$x^2 = 8 \cdot 8 \cdot 4$

For 7-9 find the length of each leg of right triangle GHK. (find GH and HK)

Hint: find altitude first, then you can do similar triangles or Pythagorean Theorem.

13)



$HA^2 = 5 \cdot 15$

$HA^2 = 75$

$HA = 5\sqrt{3}$

$HG^2 = 5^2 + (5\sqrt{3})^2$

$HG^2 = 25 + 75$

$HG^2 = 100$

$HG = 10$

$HK^2 + HG^2 = GK^2$

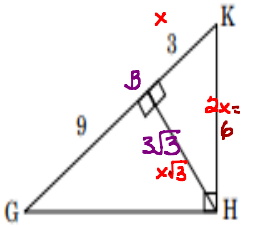
$HK^2 + 10^2 = 20^2$

$10(HK^2 + 1^2 = 2^2)$

$10(HK^2 = 3)$

$HK = 10\sqrt{3}$

14)

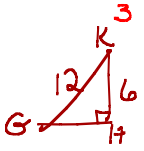


$HB^2 = 9 \cdot 3$

$HB = \sqrt{9} \cdot \sqrt{3}$

$HB = 3\sqrt{3}$

30	60	90
x	$x\sqrt{3}$	2x
3	$3\sqrt{3}$	6



$GH^2 + 6^2 = 12^2$

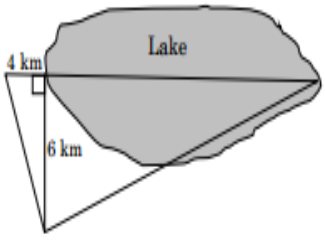
$GH^2 + 36 = 144$

$GH^2 = 108$

$GH = \sqrt{36}\sqrt{3}$

$GH = 6\sqrt{3}$

15) How far is it across the lake?



$alt^2 = part \cdot part$

$6^2 = 4\ (Lake)$

$\frac{36}{4} = Lake$

$9 = Lake$