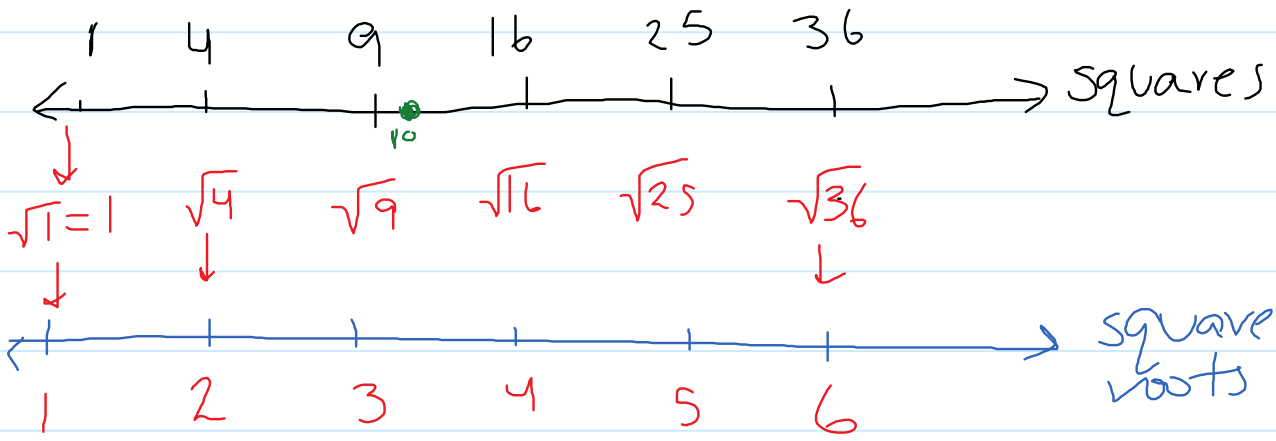
1.2 Square Roots of Non-Perfect Squares

February 12, 2015 9:20 AM

Squares and Square Roots on # Lines

- Most #'s are not perfect squares
- Use # lines to estimate the square roots of these #'s



10 is between the perfect squares 9 and 16

↳ so $\sqrt{10}$ is between $\sqrt{9}$ and $\sqrt{16}$

$= 3$ $= 4$

so $\sqrt{10} \doteq 3.2$ which is between 3 and 4

ex #1 estimate $\sqrt{\frac{3}{10}}$

* 3 is close to the perfect

square 4

10 is close to the perfect square 9

$$\sqrt{\frac{3}{10}} = \sqrt{\frac{4}{9}} = \frac{2}{3}$$

so $\sqrt{\frac{3}{10}} = \frac{2}{3}$ # double check with calc

The Pythagorean Theorum

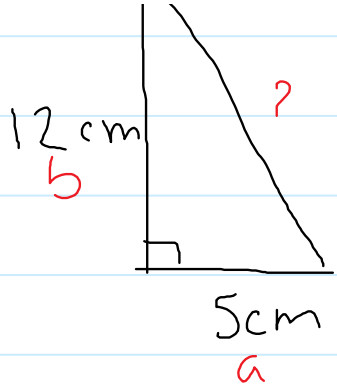
- used in right triangles only

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

Ex #2

Find length of hypotenuse

$$h^2 = a^2 + b^2$$



$h^2 = a^2 + b^2$

$= 5^2 + 12^2$

$= 25 + 144$

$\sqrt{h^2} = \sqrt{169}$

$h = 13\text{ cm}$

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