Warm - Up

① $-\sqrt{8^2} + \sqrt{5^2} = -8 + 5$

$= \boxed{-3}$

② $\sqrt{-6^2 \oplus 10^2} = \sqrt{-36 \oplus 100}$

$= \sqrt{64}$

$= \boxed{8}$

$(-6)^2 = -6 \times -6$

$= +36$

$-6^2 = -(6 \times 6)$

$= -36$

③ $(\sqrt{9} \oplus \sqrt{4})^2 = (3+2)^2 \Rightarrow$ ~~$3^2+2^2 =$~~

~~$9+4=13$~~

$= (5)^2$

$= \boxed{25}$

Pg 10 Section 1.2

7b) $C = 600\sqrt{A}$

i) $\frac{1200}{600} = \frac{600\sqrt{A}}{600}$

$(2)^2 = (\sqrt{A})^2 \Rightarrow A = 2^2$

$2^2 = A = 4$

3i) $\sqrt{5^2 + 12^2}$ BEDMAS

$= \sqrt{25 + 144}$

$= \sqrt{169} = 13$

13) $A = 32\pi$

$A_{circle} = \pi r^2$

$A_{\frac{1}{2}\,circle} = \frac{\pi r^2}{2} = \frac{1}{2}\pi r^2$

$\frac{1}{2}\pi r^2 = 32\pi$

$\frac{r^2}{2} = 32$

$\sqrt{r^2} = \sqrt{64}$

$r = 8$

$d = 2r = 2 \cdot 8 = 16$ cm

8) $l = 2w$

$A = 242 = l \times w$

$242 = 2w \times w$

$\frac{242}{2} = \frac{2w^2}{2}$

$\sqrt{121} = \sqrt{w^2}$

$11 = w$

$l = 2w = 22$

10) $P = 4l$

Quiz Mon

1.1, 1.2, 1.3

Math 9 Section 1.3 – Pythagorean Theorem

Homework: Section 1.3; 1-3 all, 6-7 even, 8-11 – Answers on Pg. 362

(Don't use a calculator for questions in #2 and #3)

From last classes, we know we can calculate square roots with our calculator, but how do we estimate square roots if the number isn't a perfect square?

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Example: Estimate $\sqrt{14}$ **without** a calculator!

$\sqrt{9} < \sqrt{14} < \sqrt{16}$

$3 < \sqrt{14} < 4$

Guess: 3.7
3.8

Check: $(3.7)^2 = 13.69$

$(3.8)^2 = 14.44$

$\sqrt{14}$ between 3.7 and 3.8

$\sqrt{14} \approx 3.74\ldots$

For each example below, without a calculator determine...

1) between which two integers is the value of the square root?
2) which one is it closer to?

$11^2 = 121$, $12^2 = 144$, $13^2 = 169$

$\sqrt{39}$

$36 < \sqrt{39} < 49$

$6 < \sqrt{39} < 7$

Closer to 6

because 39 is closer to 36

$\sqrt{162}$

$\sqrt{144} < \sqrt{162} < \sqrt{169}$

$12 < \sqrt{162} < 13$

Closer to 13

because 162 is closer to 169

$-\sqrt{105}$

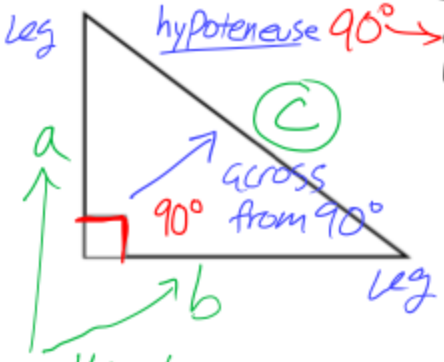
$\sqrt{100} < \sqrt{105} < \sqrt{121}$

$10 < \sqrt{105} < 11$

Closer to 10

because 105 is closer to 100

Pythagorean Theorem:



Right triangle

① $a^2 + b^2 = c^2$ (Solve for c)

$-b^2 \quad -b^2$

② $a^2 = c^2 - b^2$ (Solve for a)

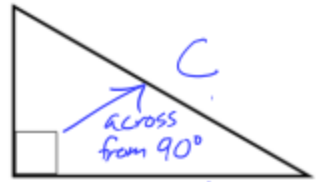
③ $b^2 = c^2 - a^2$ (Solve for b)

How to solve for missing side of a right triangle

1) Label each side of the triangle with the letters a, b, c — Be Careful
2) Figure out which equation to use
3) Put in numbers and simplify the right-hand side
4) Don't forget to square root at the end!

Solve for the missing side exactly, then to one decimal place (if needed):

a = 5



12 = b

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

$c^2 = 5^2 + 12^2$

$c^2 = 25 + 144$

$c^2 = 169$

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

$c = \sqrt{169}$

$c = 13$

b = 13

18 = c

$a^2 = c^2 - b^2$

$a^2 = 18^2 - 13^2$

$a^2 = 324 - 169$

$a^2 = 155$

$\sqrt{a^2} = \sqrt{155}$

$a = \sqrt{155}$ exact

$a = 12.4$ decimal

Proof for Pythagorean Theorem: Try to find 2 ways to cover the white square