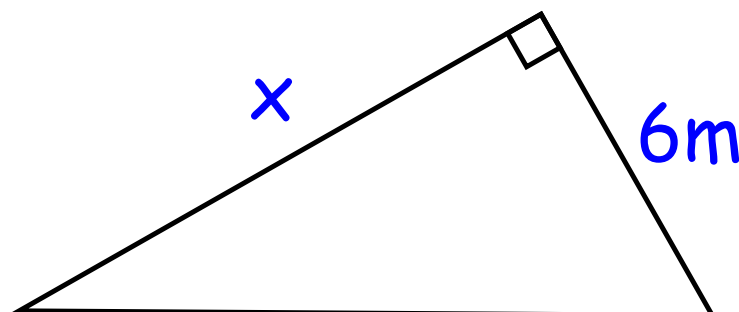


HW: ~~10.5/3, 4, 9, 47~~
 10.5 Algebra Lab/1-6

~~USE
 RADICALS~~

Warm up:

Solve for the unknown side length.



$$\begin{aligned}
 x^2 + 6^2 &= 10^2 \\
 x^2 + 36 &= 100 \\
 \underline{-36 \quad -36} & \\
 x^2 &= 64
 \end{aligned}$$

$$\begin{aligned}
 \sqrt{x^2} &= \sqrt{64} \\
 x &= 8
 \end{aligned}$$

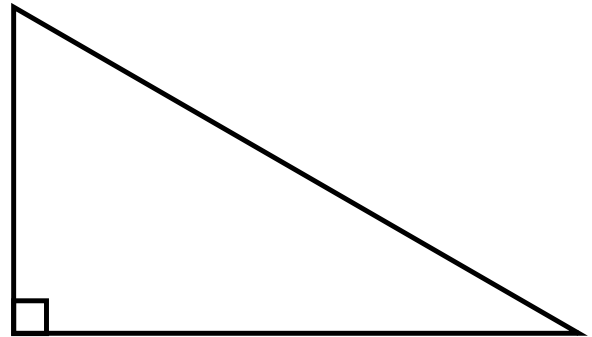
8m

$$5^2 + 8^2 = c^2$$
$$25 + 64 = c^2$$
$$\sqrt{89} = \sqrt{c^2}$$

$$\sqrt{89} = c$$

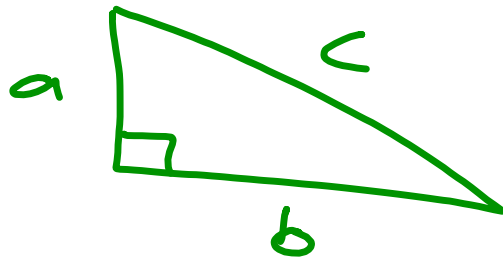
$$\sqrt{89} \text{ cm}$$

5cm



8cm

Pythagorean Theorem



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

$$(2x + 3)^2$$

$$(2x + 3)(2x + 3)$$

$$4x^2 + 12x + 9$$

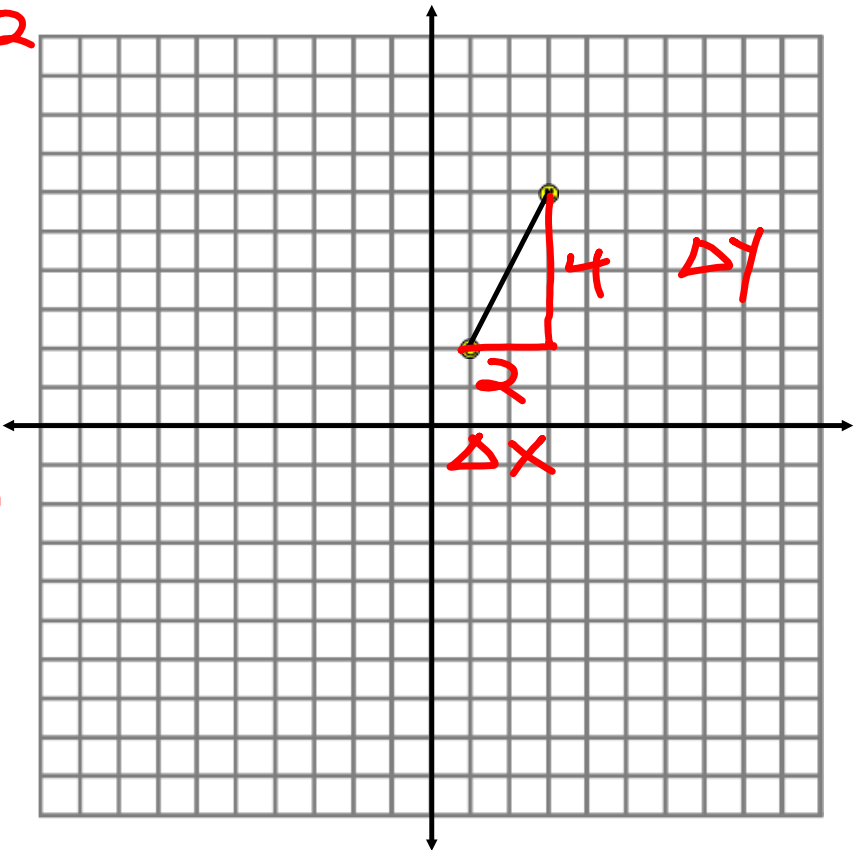
$$2^2 + 4^2 = c^2$$

$$4 + 16$$

$$\sqrt{20} = \sqrt{c^2}$$

$$\sqrt{20} = c$$

$$2\sqrt{5} = c$$

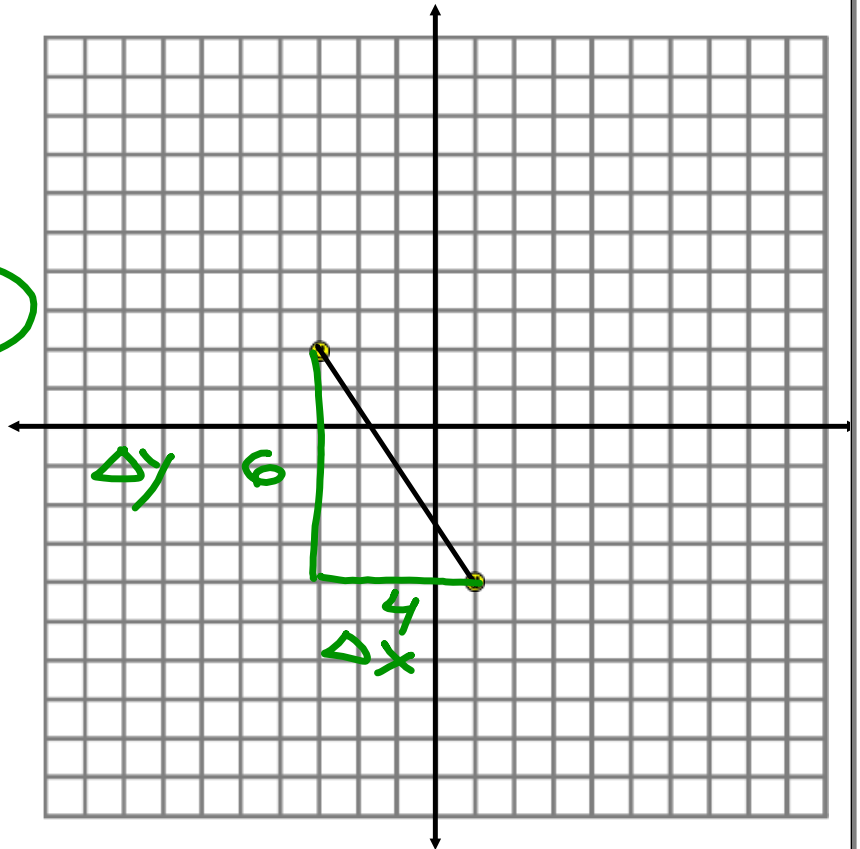


$$6^2 + 4^2 = x^2$$

$$36 + 16$$

$$\sqrt{52} = \sqrt{x^2}$$

$$2\sqrt{13} = x$$



$$d^2 = (\Delta x)^2 + (\Delta y)^2$$

$$d = \sqrt{(\Delta x)^2 + (\Delta y)^2}$$

What is the distance between (5, 8) and (7, 13)?

$$\Delta x = 7 - 5 = 2$$

$$\Delta y = 13 - 8 = 5$$

$$2^2 + 5^2 = d^2$$

$$d = \sqrt{2^2 + 5^2}$$

$$d = \sqrt{4 + 25}$$

$$d = \sqrt{29}$$

What is the distance between $(-4, -3)$ and $(5, -2)$?

$$\Delta x = -4 - 5 = -9 \rightarrow 9$$

$$\Delta y = -3 - (-2) = -1 \rightarrow 1$$

$$9^2 + 1^2 = x^2$$

$$\sqrt{81 + 1} = \sqrt{x^2}$$

$$\sqrt{82} = x$$

HW Solutions

20

$$\sqrt{\frac{45m^3n^2}{5mn^4}}$$

$$\sqrt{\frac{9m^2}{n^2}}$$

$$\frac{3m}{n}$$

$$\textcircled{22} \quad \sqrt{\frac{324r^{50}}{49}} = \frac{18r^{25}}{7}$$

$$\textcircled{16} \quad \sqrt{49a^2b^2} = 7|a|b \\ > |a| |b|$$

$$\textcircled{19} \quad \pm \sqrt{\frac{256}{400s^{12}}} = \pm \sqrt{\frac{16}{25s^{12}}}$$

$$\pm \frac{16}{20s^6}$$

$$\pm \frac{4}{5s^6}$$

 $\textcircled{8}$

$$-\sqrt{16d^8} = -4d^4$$

Q. $\sqrt{m^2 - 12m + 36}$
 $\sqrt{(m-6)^2}$
 $|m-6|$

(39)

$$0 = 80p^2 - 125$$

+125

+125

$$\frac{125}{80} = \frac{80p^2}{80}$$

$$\frac{125}{80} = p^2$$

$$\sqrt{\frac{125}{80}} = \sqrt{p^2}$$

$$p = \pm \frac{5}{4}$$

Find the distance between the following pairs of points.

1) (2, 6) and (-1, 10)

$$\sqrt{3^2 + 4^2} = \sqrt{9 + 16} = \sqrt{25} = 5$$

2) (0, 4) and (-3, -3)

$$\sqrt{3^2 + 7^2} = \sqrt{9 + 49} = \sqrt{58}$$

3) (10, 9) and (8, -1)

$$\sqrt{2^2 + 10^2} = \sqrt{4 + 100} = \sqrt{104} = 2\sqrt{26}$$

4) (-2, -5) and (-5, -3)

$$\sqrt{3^2 + 2^2} = \sqrt{9 + 4} = \sqrt{13}$$

