

7.5 Using Pythagorean Theorem

pg. 322-323 # 5-15 odd, 18, 22-24

5. $8m^2 + 15m^2 = 17m^2$

$$\begin{array}{r} 15 \\ -15 \\ \hline 75 \\ +75 \\ \hline 150 \\ +150 \\ \hline 300 \end{array} \qquad \begin{array}{r} 17 \\ -17 \\ \hline 18 \\ +18 \\ \hline 36 \\ +36 \\ \hline 72 \end{array}$$

$64m^2 + 225m^2 = 289m^2$

$289m^2 = 289m^2$ ✓

is a right triangle

7. $8ft^2 + 8.5ft^2 = 11.5ft^2$

$64ft^2 + 72.25ft^2 = 132.25ft^2$

$136.25ft^2 \neq 132.25ft^2$

Not a right

9. $9mi^2 + 1.2mi^2 = 1.5mi^2$

$81mi^2 + 1.44 = 2.25mi^2$

$2.25mi^2 = 2.25mi^2$ ✓

is a right triangle

$$\begin{array}{r} 12 \\ -12 \\ \hline 24 \\ +24 \\ \hline 48 \\ +48 \\ \hline 96 \end{array}$$

11. $d = \sqrt{(7-1)^2 + (6-2)^2}$

$d = \sqrt{36 + 16}$

$d = \sqrt{52}$

13. $d = \sqrt{(7-2)^2 + (2-4)^2}$

$d = \sqrt{25 + 4}$

$d = \sqrt{29}$

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$$15. \quad d = \sqrt{[0 - (-6)]^2 + [0 - (-7)]^2}$$

$$d = \sqrt{36 + 49}$$

$$d = \sqrt{85}$$

18. The brace will form a right triangle if $15^2 + 20^2 = 25^2$

$$225 + 400$$

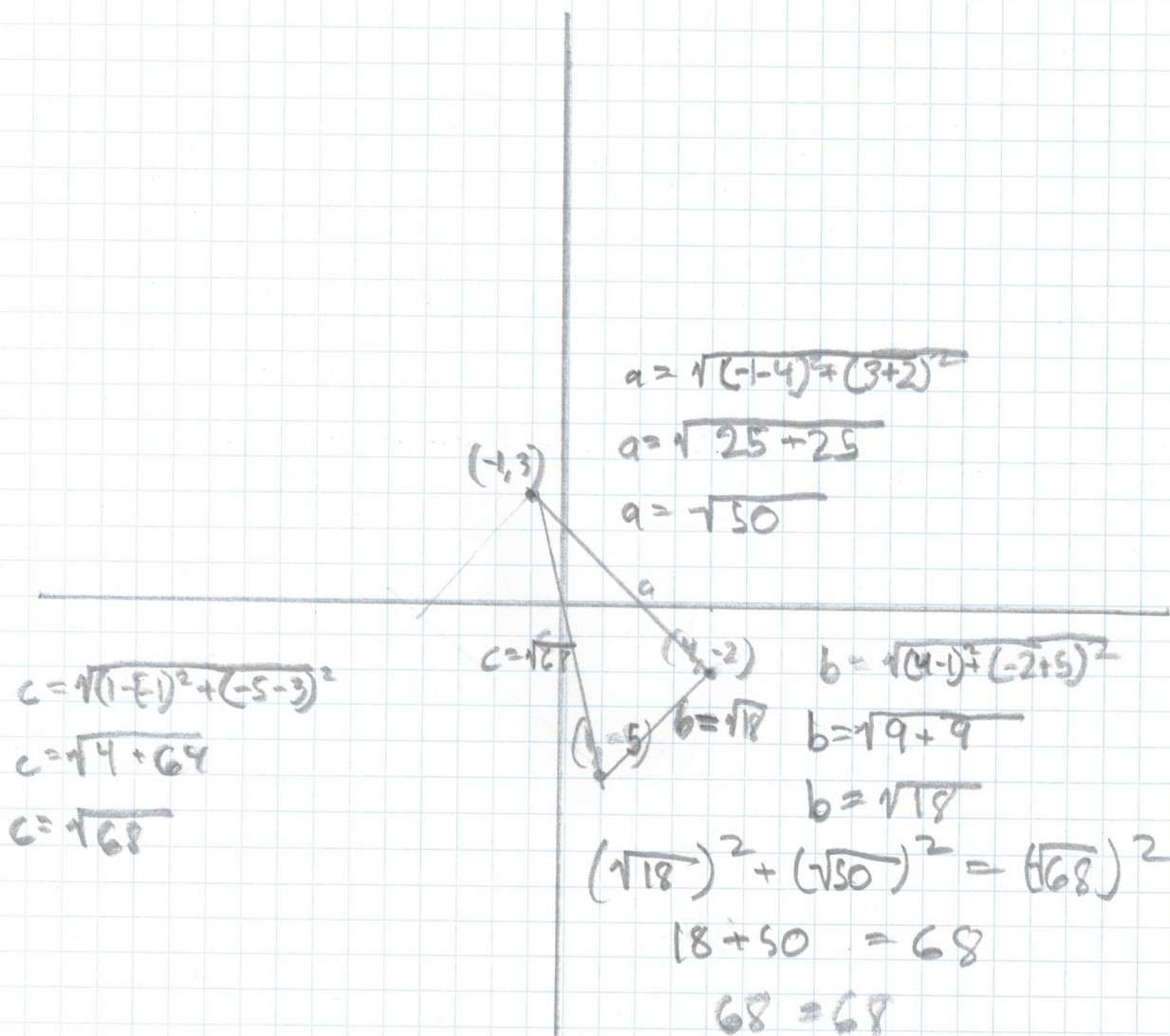
$$625$$

$$625 = 625$$

The brace is a 90° angle

22.

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If $a^2 + b^2 = c^2$ then
 the triangle is 90°

$$a^2 + b^2 = (\sqrt{18})^2 + (\sqrt{50})^2 = 68$$

$$c^2 = (\sqrt{68})^2 = 68$$

So, this triangle is indeed 90°

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$$23. \quad d_1 = \sqrt{(20-0)^2 + (20-50)^2}$$

$$d_1 = \sqrt{100 + 4900}$$

$$d_1 = \sqrt{5000}$$

$$d_2 = \sqrt{(80-20)^2 + (-10-20)^2}$$

$$d_2 = \sqrt{3600 + 100}$$

$$d_2 = \sqrt{3700}$$

$$d_3 = \sqrt{(10-80)^2 + (50+10)^2}$$

$$d_3 = \sqrt{4900 + 3600}$$

$$d_3 = \sqrt{8500}$$

$$(\sqrt{5000})^2 + (\sqrt{3700})^2 \quad (8500)$$

$$5000 + 3700$$

$$8700 \text{ yards}^2$$

$$8500 \text{ yards}^2$$

$$d_1^2 + d_2^2 \neq d_3^2$$

the pass doesn't form a right triangle

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24 NO, your friend will do $(2,4)-(9,7)$,
while it's supposed to be $(9,7)-(2,4)$,
to follow the formula.