Warm Up Grade 8

Applying Knowledge

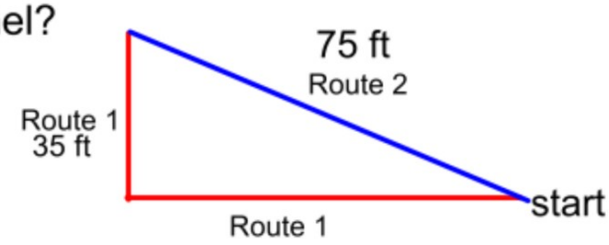
Similar to test question

1) Rachel needs to decide which company pays the best. Company A will pay her $7.50/ft while Company B will pay $10/ft. Company A will only travel Route 1 but Company B will only travel Route 2.

a) How much will company A pay Rachel?

Need to find missing part of route 1

(Side a)



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

$a^2 = (75ft)^2 - (35ft)^2$

$a^2 = 5625\ ft^2 - 1225ft^2$

$a^2 = 4400\ ft^2$

$a = \sqrt{4400\ ft^2}$

$a = 66.3$ ft

Route 1 = 35 ft + 66.3 ft

= 101.3 ft

101.3 x $7.50 = $759.75

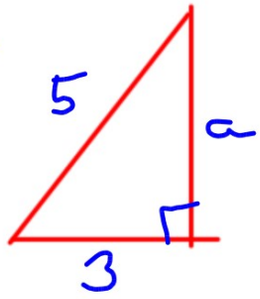
b) How much will company B pay Rachel?

75ft x $10/ft = $750

c) Who should Rachel pick and why?

Rachel gets paid more money to work for company B.

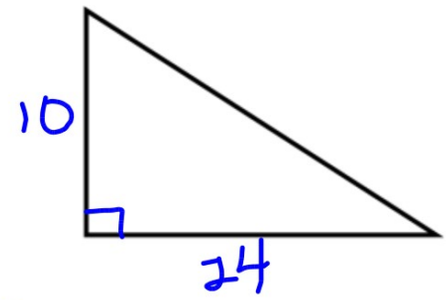
6.



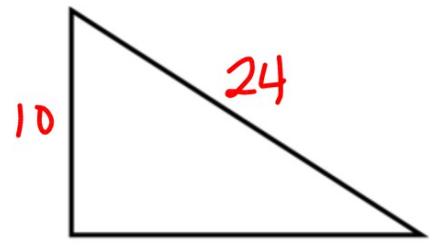
$c^2 = a^2 + b^2$
$5^2 = a^2 + 3^2$
$25 = a^2 + 9$
$25 - 9 = a^2 + 9 - 9$
$16 = a^2$
$\sqrt{16} = \sqrt{a^2}$
$4 = a$

The ladder reaches up 4 m.

7.



$c^2 = a^2 + b^2$
$c^2 = 10^2 + 24^2$
$c^2 = 100 + 576$
$c^2 = 676$
$\sqrt{c^2} = \sqrt{676}$
$c^2 = 26$

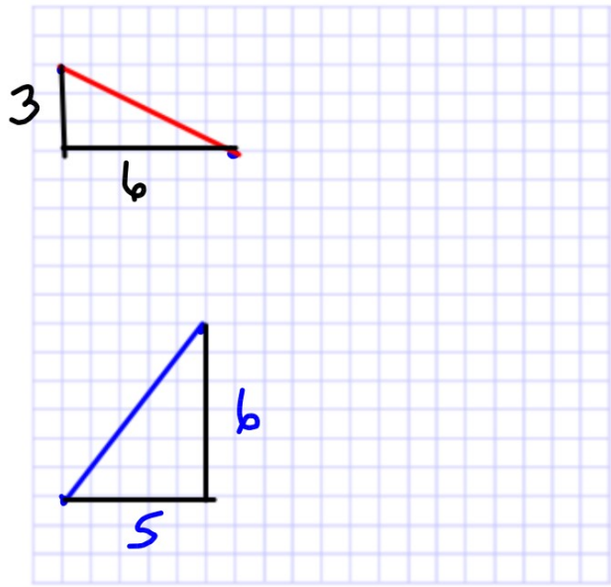


$c^2 = a^2 + b^2$
$24^2 = a^2 + 10^2$
$576 = a^2 + 100$
$576 - 100 = a^2 + 100 - 100$
$476 = a^2$
$\sqrt{476} = \sqrt{a^2}$
$21.8 = a$

b) 2 answers are possible because it doesn't say if 24 is one leg or the hypotenuse.

8

a)

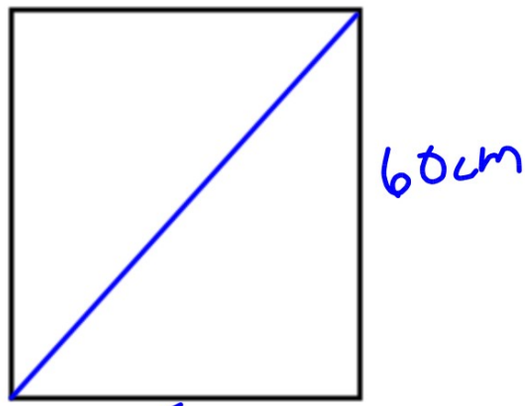


b)

a) $c^2 = a^2 + b^2$
$c^2 = 5^2 + 6^2$
$c^2 = 9 + 36$
$c^2 = 45$
$\sqrt{c^2} = \sqrt{45}$
$c = 6.7$

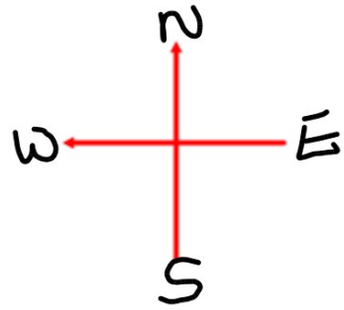
$c^2 = a^2 + b^2$
$c^2 = 5^2 + 6^2$
$c^2 = 25 + 36$
$c^2 = 61$
$\sqrt{c^2} = \sqrt{61}$
$c = 7.8$

9.



$c^2 = a^2 + b^2$
$c^2 = 25^2 + 60^2$
$c^2 = 625 + 3600$
$c^2 = 4225$
$\sqrt{c^2} = \sqrt{4225}$
$c = 65$

The diagonal should be 65 cm



10. Dock 84 m Boat B

35m

Boat A

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

$c^2 = 35^2 + 84^2$

$c^2 = 1225 + 7056$

$c^2 = 8281$

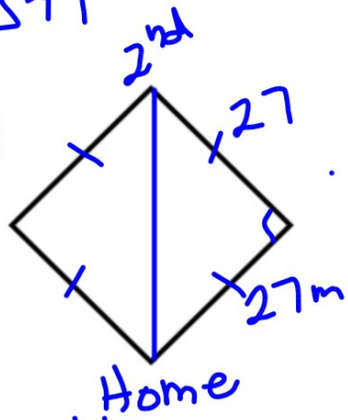
$\sqrt{c^2} = \sqrt{8281}$

$c = 91$ m

The boats are 91 m apart

Pg 49

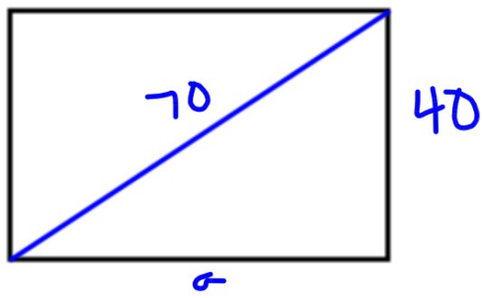
11



$c^2 = a^2 + b^2$
$c^2 = 27^2 + 27^2$
$c^2 = 729 + 729$
$c^2 = 1458$
$\sqrt{c^2} = \sqrt{1458}$
$c = 38.2\text{m}$

The throw must be 38.2 m

13.

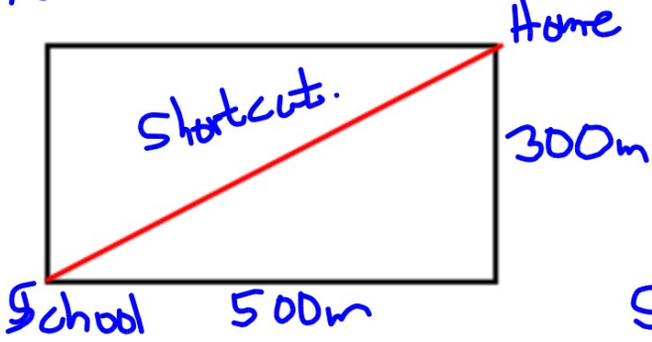


$c^2 = a^2 + b^2$
$70^2 = a^2 + 40^2$
$4900 = a^2 + 1600$
$4900 - 1600 = a^2 + 1600 - 1600$
$3300 = a^2$
$\sqrt{3300} = \sqrt{a^2}$
$57.4 = a$ cm

The length is 57.4 cm

14. To get from A to B, you move right 4 and up 3.
To get from A to F, you move down 3 and left 4, so F is the same distance from A as B is.

16.



$c = 5.8$

Joanna normally walks 800m

Short cut

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

$c^2 = 300^2 + 500^2$

$c^2 = 9000 + 25000$

$c^2 = 34000$

$\sqrt{c^2} = \sqrt{34000}$

$c = 583$

$$\begin{array}{r} 7\,9\,10 \\ \cancel{800} \\ -\,5\,8\,3 \\ \hline 2\,1\,7 \end{array}$$

The shortcut is 217m shorter

Class/Homework

Page 58-59 #5, 6, 7, 10

Test Outline WS

STUDY

Test Outline
→ 5 MC
→ 9 Short Response
→ given # of factors determine if # is a perfect square

→ use $c^2 = a^2 + b^2$ or $a^2 = c^2 - b^2$ to find lenght of missing side of right Δ

→ Diagonal length

→ Know difference of square and Square root (√)

→ Estimate √ of non-perfect square # Show work

→ word problem similar to warm up today