



WARM UP GRADE 8

DATE:

Apr 22



The following lengths are the sides of a triangle, determine if it is a right triangle?

40cm , 24 cm, 32 cm

Biggest
C

a

b

$$\begin{array}{l} c^2 \\ (40\text{cm})^2 \\ 1600\text{cm}^2 \end{array} \left\{ \begin{array}{l} a^2 + b^2 \\ (24\text{cm})^2 + (32\text{cm})^2 \\ 576\text{cm}^2 + 1024\text{cm}^2 \\ 1600\text{cm}^2 \end{array} \right.$$

Same
So Right Δ



WARM UP GRADE 8

WEDNESDAY, FEB. 21



The following lengths are the sides of a triangle, determine if it is a right triangle?

^c
40cm , 24 cm, 32 cm

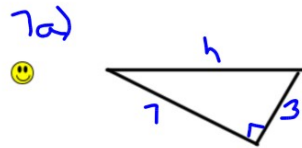
$$\begin{array}{l} c^2 \\ (40\text{cm})^2 \\ 1600\text{cm}^2 \end{array} \left. \vphantom{\begin{array}{l} c^2 \\ (40\text{cm})^2 \\ 1600\text{cm}^2 \end{array}} \right\} \begin{array}{l} a^2 + b^2 \\ (24\text{cm})^2 + (32\text{cm})^2 \\ 576\text{cm}^2 + 1024\text{cm}^2 \\ \underline{\hspace{1.5cm}} \\ 1600\text{cm}^2 \end{array}$$

Same so
Right Δ

Page 34-35

#7(a,b), 8(a),9(a), 10

Page 34-357(a,b),8(a,b), 9(a), 10, 13(a,b)



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

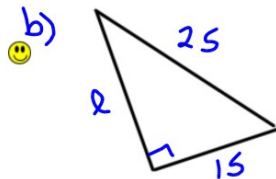
$$c^2 = 7^2 + 3^2$$

$$c^2 = 49 + 9$$

$$c^2 = 58$$

$$\sqrt{c^2} = \sqrt{58}$$

$$c = 7.6$$



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

$$25^2 = a^2 + 15^2$$

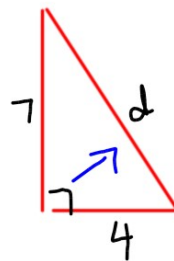
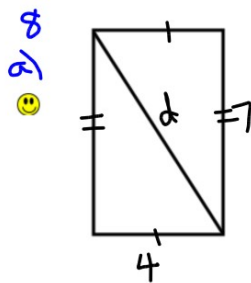
$$625 = a^2 + 225$$

$$625 - 225 = a^2 + 225 - 225$$

$$400 = a^2$$

$$\sqrt{400} = \sqrt{a^2}$$

$$20 = a$$



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

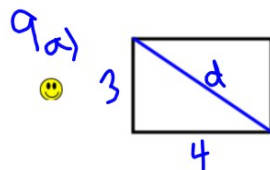
$$c^2 = 7^2 + 4^2$$

$$c^2 = 49 + 16$$

$$c^2 = 65$$

$$\sqrt{c^2} = \sqrt{65}$$

$$c = 8.1$$



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

$$c^2 = 3^2 + 4^2$$

$$c^2 = 9 + 16$$

$$c^2 = 25$$

$$\sqrt{c^2} = \sqrt{25}$$

$$c = 5$$

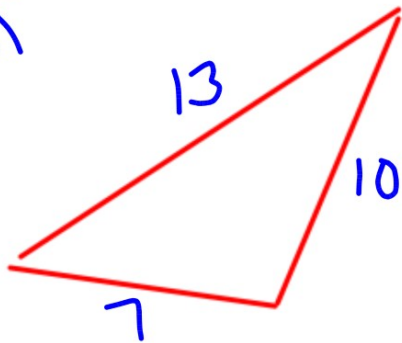
10.
If you know the side lengths of a right triangle, the hypotenuse will be the largest number since it is always the longest side.

Homework Solutions Page 43 #4(a,b)

#6 (a,c,f)

#7(a,f)

#8

4.
a)

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

$$13^2$$

$$10^2 + 7^2$$

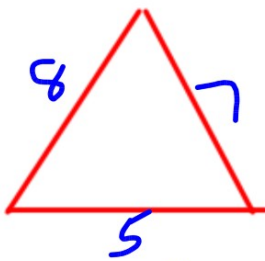
$$100 + 49$$

$$169$$

$$149$$

$169 \neq 149$, so not a right triangle.

b)



$$\text{Does } c^2 = a^2 + b^2$$

$$8^2$$

$$5^2 + 7^2$$

$$64$$

$$25 + 49$$

$$74$$

$64 \neq 74$, so not a right triangle.

Homework pg. 43 # 6-12 and Reflect

#4(a,b) Homework Solutions

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

#6 (a,c,f)

#7(a,f)

☺ a) 16, 30, 34

$$34^2 \\ 1156$$

$$16^2 + 30^2 \\ 256 + 900 \\ 1156$$

They are equal so it is a right triangle.

☺ c) 25

$$20^2 + 15^2 \\ 400 + 225 \\ 625$$

They are equal so it is a right triangle.

e) 17^2 $14^2 + 5^2$
 289 $196 + 25$
 221

They are not equal so it is not a right triangle.

a) 15^2 $9^2 + 9^2$
 225 $81 + 81$
 162

They are not equal so it is not a right triangle.

b) 12^2
 144

$$8^2 + 10^2 \\ 64 + 100 \\ 164$$

They are not equal so it is not a right triangle.

d) 53^2
 2809

$$28^2 + 45^2 \\ 784 + 2025 \\ 2809$$

They are equal so it is a right triangle.

They are equal so it is a right triangle.

They are not equal so it is not a right triangle.

☺ f) 30^2
 900

$$9^2 + 20^2 \\ 81 + 400 \\ 481$$

They are not equal so it is not a right triangle.

h) 26^2
 676

$$10^2 + 24^2 \\ 100 + 576 \\ 676$$

They are equal so it is a right triangle.

Homework Solutions #4(a,b)

#6 (a,c,f)

#7(a,f)

#8

7. Does $c^2 = a^2 + b^2$

a) $16, 30, 34$
 $34^2 = 1156$
 $16^2 + 30^2 = 256 + 900 = 1156$

They are equal so it is a Pythagorean triple.

c) $39, 15, 36$
 $39^2 = 1521$
 $15^2 + 36^2 = 225 + 1296 = 1521$

They are equal so it is a Pythagorean triple.

e) $35, 38, 9$
 $35^2 = 1225$
 $38^2 + 9^2 = 900 + 81 = 981$

They are not equal so it is not a Pythagorean triple.

b) $9, 6, 8$
 $9^2 = 81$
 $6^2 + 8^2 = 36 + 64 = 100$

They are not equal so it is not a Pythagorean triple.

d) $65, 63, 16$
 $65^2 = 4225$
 $63^2 + 16^2 = 3969 + 256 = 4225$

They are equal so it is a Pythagorean triple.

They are equal so it is a Pythagorean triple.
 They are not equal so it is not a Pythagorean triple.

f) $58, 40, 42$
 $58^2 = 3364$
 $40^2 + 42^2 = 1600 + 1764 = 3364$

They are equal so it is a Pythagorean triple.



Warm Up Grade 8



Applying Knowledge

Similar to test question

1) Jack and Ted have competing paving companies. The school wants to hire the one of the companies to pave a path to school. They have two choices;

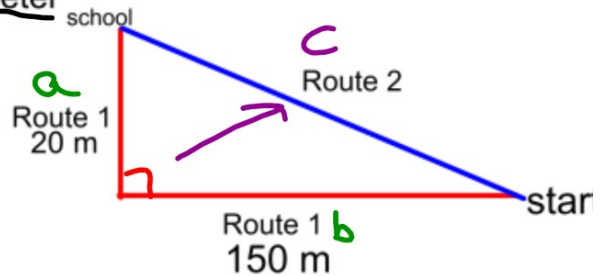
Ted travels along route 1 but charges \$20 per meter

Jack travels along route 2 but charges \$22 per meter

a) How much does Ted charge?

$$\begin{aligned} \text{Ted} &= 20\text{m} + 150\text{m} \\ &= 170\text{m} \end{aligned}$$

$$170\text{m} \times \$20/\text{m} = \$3400$$



b) How much will Jack Charge? (Requires more work than part a)

$$\begin{aligned} a &= 20\text{m} \\ b &= 150\text{m} \\ c &= ? \end{aligned}$$

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

$$c^2 = (150\text{m})^2 + (20\text{m})^2$$

$$c^2 = 22500\text{m}^2 + 400\text{m}^2$$

$$c^2 = 22900\text{m}^2$$

$$\sqrt{c^2} = \sqrt{22900\text{m}^2}$$

$$c = 151.3\text{m}$$

$$\begin{aligned} &\text{Cost} \\ &151.3\text{m} \times \$22/\text{m} \\ &= \$3328.60 \end{aligned}$$

c) Who has the better deal for the school?

Jack's is a cheaper deal.



Warm Up Grade 8



1) Jack and Ted have competing paving companies. The school wants to hire the one of the companies to pave a path to school. They have two choices;

Ted travels along route 1 but charges \$20 per meter

Jack travels along route 2 but charges \$22 per meter



a) How much does Ted charge?

$$\begin{array}{r} 20 \text{ m} + 150 \text{ m} = 170 \text{ m} \\ \times \$20 \\ \hline \$3400 \end{array} \quad \text{Ted charges } \$3400$$

b) How much will Jack Charge? (Requires more work than part a)

Need to find route 2 ...THE Hypotenuse

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

$$c^2 = (150 \text{ m})^2 + (20 \text{ m})^2$$

$$c^2 = 22\,500 \text{ m}^2 + 400 \text{ m}^2$$

$$c^2 = 22\,900 \text{ m}^2$$

$$c = \sqrt{22\,900 \text{ m}^2}$$

$$c = 151.3 \text{ m}$$

$$151.3 \times \$22 = \$3328.60$$

Jack Charges
\$3328.60

c) Who has the better deal for the school?

Jack is the better deal. He charges \$71.40 cheaper.

$$\$3400 - \$3328.60 = \$71.40$$

Class/Homework

Page 44-45

#9, #10, #12 (a, c), #14

Page 48-49

#2, #3, #4a, #5a

↓
C must be longest ^{Test} opposite to 90°

Unit 1: Square Roots & Pythagorean Theorem

Tuesday, April 28

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

$$\text{Ex) } (\sqrt{31})^2 = 31$$

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