



WARM UP GRADE 8

MONDAY, NOV. 20

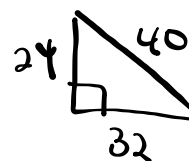


The following lengths are the sides of a triangle, determine if it is a right triangle?

c 40cm , a 24 cm, b 32 cm

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

It is a Right triangle

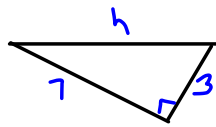


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#7(a,b), 8(a),9(a), 10

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

7a)



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

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

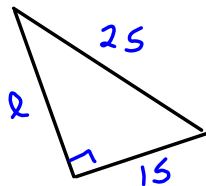
$$c^2 = 49 + 9$$

$$c^2 = 58$$

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

$$c = 7.6$$

b)



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

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

$$625 = a^2 + 225$$

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

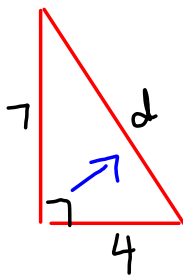
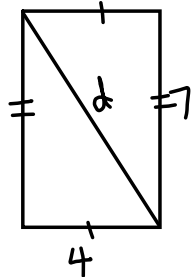
$$400 = a^2$$

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

$$20 = a$$

8

a)



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

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

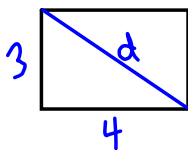
$$c^2 = 49 + 16$$

$$c^2 = 65$$

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

$$c = 8.1$$

9a)



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

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

$$c^2 = 9 + 16$$

$$c^2 = 25$$

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

$$c = 5$$

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.

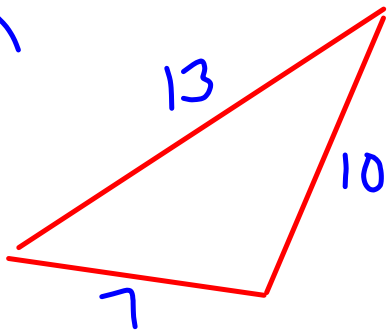
Homework Solutions Page 43

#4(a,b)

#6 (a,c,f)

#7(a,f)

#8

4.
a)

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

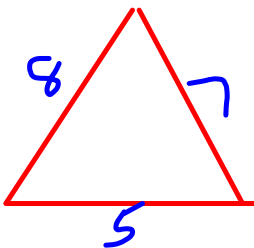
$$13^2 \quad 10^2 + 7^2$$

$$169 \quad 100 + 49$$

$$169 \quad 149$$

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

b)



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

$$8^2 \quad 5^2 + 7^2$$

$$64 \quad 25 + 49$$

$$64 \quad 74$$

$64 \neq 74$, 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

$$34^2 = 1156$$

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

#8 b) $12^2 = 144$

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

They are equal so it is a right triangle.

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

☺ c) $25^2 = 625$

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

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 equal so it is a right triangle.

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

e) $17^2 = 289$

$$14^2 + 5^2 = 196 + 25 = 221$$

☺ f) $30^2 = 900$

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

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

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

g) $15^2 = 225$

$$9^2 + 9^2 = 81 + 81 = 162$$

h) $26^2 = 676$

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

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

They are equal so it is a right triangle.

Homework Solutions #4(a,b)

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, 42
 $39^2 = 1521$
 $15^2 + 42^2 = 225 + 1764 = 1989$

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

e) 35, 30, 45
 $35^2 = 1225$
 $30^2 + 45^2 = 900 + 2025 = 2925$

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

b) 9, 6, 10
 $9^2 = 81$
 $6^2 + 8^2 = 36 + 64 = 100$

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

d) 65, 63, 91
 $65^2 = 4225$
 $63^2 + 91^2 = 3969 + 8281 = 12250$

They are not equal so it is not 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, 70
 $58^2 = 3364$
 $40^2 + 70^2 = 1600 + 4900 = 6500$

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

8. 15, 12, 9
 Is $15^2 = 12^2 + 9^2$?
 $15^2 = 225$
 $12^2 + 9^2 = 144 + 81 = 225$

They are equal, so the sides form a right angle.

9. 6, 7, $\sqrt{13}$
 $7^2 = 6^2 + (\sqrt{13})^2$?
 $49 = 36 + 13$

$\sqrt{9} = 3$
 $\sqrt{13}$
 $\sqrt{16} = 4$

Yes it is a right triangle.
 It is not a Pythagorean triple because one side is not a whole number.

Class/Homework

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

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

Test

Unit 1: Square Roots & Pythagorean Theorem

Tuesday, Nov. 28

9) 6, 7, $\sqrt{13}$

$\sqrt{9}$ $\sqrt{16}$
 \downarrow \downarrow
 3 4

$$\begin{array}{l}
 c^2 \\
 7^2 \\
 49
 \end{array}
 \left. \vphantom{\begin{array}{l} c^2 \\ 7^2 \\ 49 \end{array}} \right\}
 \begin{array}{l}
 a^2 + b^2 \approx 3.6 \\
 6^2 + (\sqrt{13})^2 \\
 36 + 13 \\
 \xrightarrow{\text{same}} 49
 \end{array}$$

So Right \triangle