WARM UP GRADE 8

WEDNESDAY, FEB. 22

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

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

40cm , 24 cm, 32 cm

C   a   b

$$c^2 \qquad\Big\}\qquad a^2 + b^2$$

$$40^2 \qquad\qquad 24^2 + 32^2$$

$$\qquad\qquad\qquad 576 + 1024$$
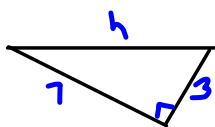
$$1600 \qquad\qquad\qquad 1600$$

Same

So makes Right △

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)

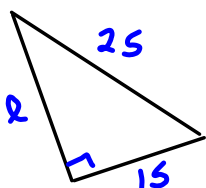**7a)**

$$c^2 = a + b^2$$
$$c^2 = 7^2 + 3^2$$
$$c^2 = 49 + 9$$
$$c^2 = 58$$
$$\sqrt{c^2} = \sqrt{58}$$
$$c = 7.6$$

b)

$$c^2 = a^2 + b^2$$
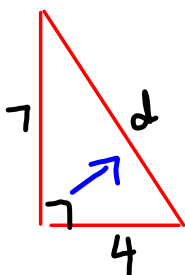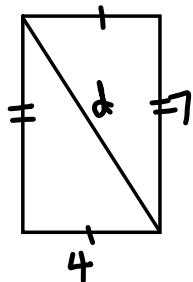$$25^2 = a^2 + 15^2$$
$$625 = a^2 + 225$$
$$625 - 225 = a^2 + 225 - 225$$
$$400 = a^2$$
$$\sqrt{400} = \sqrt{a^2}$$
$$20 = a$$

8 a)

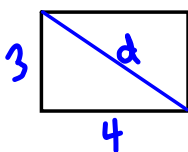$$c^2 = a^2 + b^2$$
$$c^2 = 7^2 + 4^2$$
$$c^2 = 49 + 16$$
$$c^2 = 65$$
$$\sqrt{c^2} = \sqrt{65}$$
$$c = 8.1$$

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.
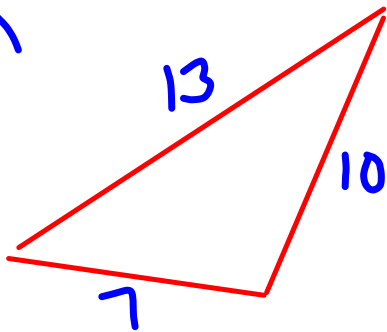
2

Homework Solutions   Page 43   #4(a,b)

#6 (a,c,f)

#7(a,f)

#8

4.

a)

13
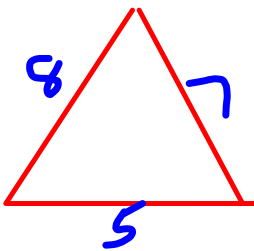
10

7

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

13^2 $10^2 + 7^2$

$100 + 49$

169   149

169 ≠ 149, so not a right triangle.

b)

8   7

5

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

8^2 $5^2 + 7^2$

64        $25 + 49$

74

64 ≠ 74, so not a right triangle.

Homework pg. 43 # 6-12 and Reflect

#4(a,b)   Homework Solutions

#6 (a,c,f)

#7(a,f)

#8

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

a) 16, 30, 34

34^2 $16^2 + 30^2$

1156 $256 + 900$

             1156

They are equal so it is a right triangle.

b) 12^2 $8^2 + 10^2$

144 $64 + 100$

           164

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

c) 25^2 $20^2 + 15^2$

625 $400 + 225$

          625

They are equal so it is a right triangle.

d) 53^2 $28^2 + 45^2$

2809 $784 + 2025$

          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.

e) 17^2 $14^2 + 5^2$

289 $196 + 25$

         221

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

f) 38^2 $9^2 + 20^2$

900 $81 + 400$

         481

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

g) 15^2 $9^2 + 9^2$

225 $81 + 81$

        162

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

h) 26^2 $10^2 + 24^2$

676 $100 + 576$

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

They are equal so it is a
Pythagorean triple.

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

They are not equal so it is not
Pythagorean triple.

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

They are equal so it is a
Pythagorean triple.

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

They are equal so it is a
Pythagorean triple.

e) 35^2 $30^2 + 9^2$
1225 $900 + 81$
        981

They are not equal so it is not
Pythagorean triple.

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

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

They are equal so it is a
Pythagorean triple.

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

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

9. 6, 7, $\sqrt{13}$
      c

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

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

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

Class/Homework

Page 44-45

    #9, #10, #12, #13, #14

Page 48-49

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

$$c^2 \big\} a^2 + b^2$$

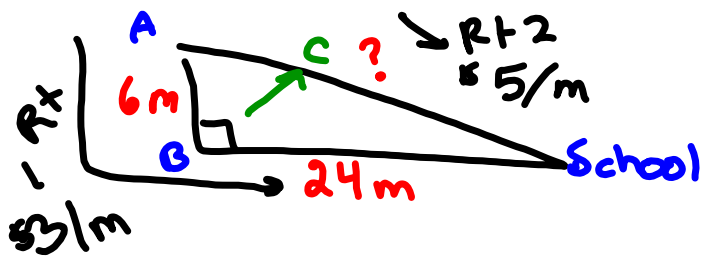$$c^2 = a^2 + b^2$$
$$\text{or}$$
$$a^2 = c^2 - b^2$$

Test

Unit 1:Square Roots & Pythagorean Theorem

Tuesday, Nov. 29

Remember

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

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

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

$$c^2 \big\} a^2 + b^2$$
$$7^2 \quad 6^2 + \sqrt{13}^2$$
$$49 \quad 36 + 13$$
$$49$$

Same
so Right $\triangle$

A

6m

B

24m

$x

$5/m

R+x

R+2

$5/m

c ?

School

Total distance
24 + 6 = 30
        × $3
       $90

$$c^2 = a^2 + b^2$$
$$c^2 = 6^2 + 24^2$$
$$c^2 = 36 + 576$$
$$c^2 = 612$$
$$\sqrt{c^2} = \sqrt{612}$$
$$c = 24.7\,m$$

Paid = 24.7m × 5
     = $123.50