Name_____ Date_____

Mrs. Roumbos 8R period_____

Extra Review for Pythagorean Theorem Quiz

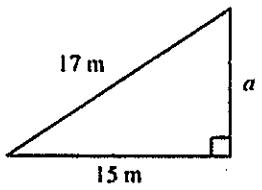
1)

State the converse of the Pythagorean Theorem.

a. The sum of the squares of the lengths of the legs of a right triangle is equal to the square of the length of the hypotenuse.
b. If the sum of the squares of the lengths of the legs of a triangle is equal to the square of the length of the hypotenuse, then the triangle is a right triangle.
c. If the sum of the squares of the two shortest sides of a triangle is greater than the square of the length of the third side, then the triangle is an acute triangle.
d. If the sum of the squares of the two shortest sides of a triangle is less than the square of the length of the third side, then the triangle is an obtuse triangle.

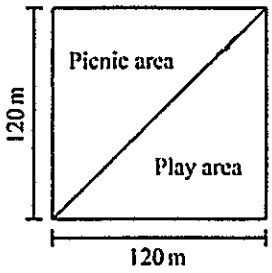
2)

Find the length of the unknown side. Round your answer to the nearest tenth.



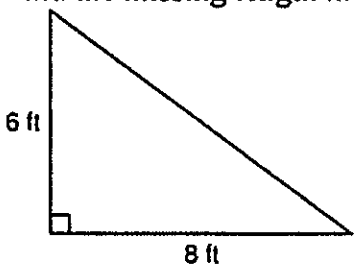
3)

A community is building a square park with sides that measure 120 meters. To separate the picnic area from the play area, the park is split by a diagonal line from opposite corners. Determine the approximate length of the diagonal line that splits the square. If necessary, round your answer to the nearest meter.



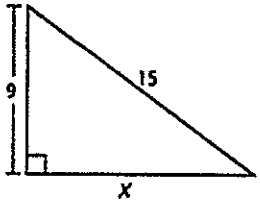
4)

Find the missing length in the right triangle.



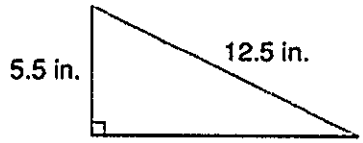
5)

What is the value of x?



6)

Find the missing measurement in the triangle to nearest tenth.



7)

Could the following set of numbers be the measures of the sides of a right triangle: 5, 12, 13?

8)

Could the following set of numbers be the measures of the sides of a right triangle: 7, 24, 26?

9)

A book that is 13 inches tall is leaning against the edge of a wall. If the bottom of the book is 5 inches from the wall, how far up the wall is the top of the book?

10)

To the nearest tenth of an inch, find the length of a diagonal of a square whose side length is 8 inches.

Name Key Date

Mrs. Roumbos 8R period

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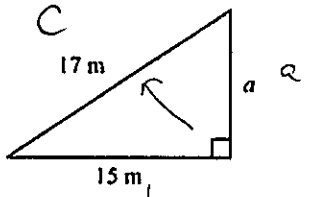


$a^2 + b^2 = c^2$

$a^2 + 15^2 = 17^2$

$a^2 + 225 = 289$

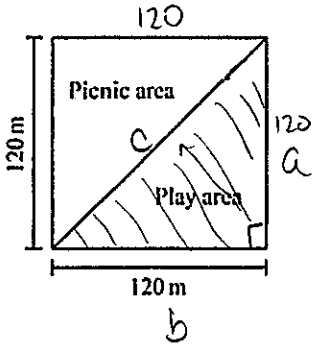
$-225 \quad -225$

$\sqrt{a^2} = \sqrt{64}$

$a = 8.0\text{ m}$

3)

A community is building a square park with sides that measure 120 meters. To separate the picnic area from the play area, the park is split by a diagonal line from opposite corners. Determine the approximate length of the diagonal line that splits the square. If necessary, round your answer to the nearest meter.



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

$120^2 + 120^2 = c^2$

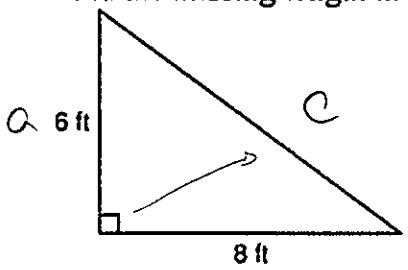
$14{,}400 + 14{,}400 = c^2$

$\sqrt{28{,}800} = \sqrt{c^2}$

$c = 170\text{m}$

4)

Find the missing length in the right triangle.



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

$6^2 + 8^2 = c^2$

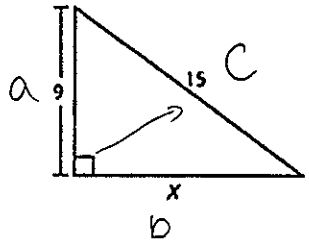
$36 + 64 = c^2$

$\sqrt{100} = \sqrt{c^2}$

$c = 10\text{ft}$

5)

What is the value of x?



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

$9^2+x^2=15^2$

$81+x^2=225$

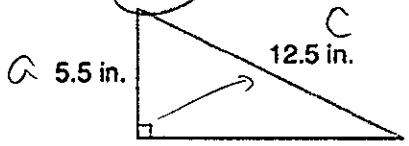
$-81 \quad -81$

$\sqrt{x^2}=\sqrt{144}$

$x=12$

6)

Find the missing measurement in the triangle to nearest tenth.



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

$(5.5)^2+b^2=(12.5)^2$

$30.25+b^2=156.25$

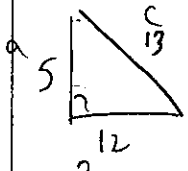
$-30.25 \quad -30.25$

$\sqrt{b^2}=\sqrt{126}$

$b=11.2$ in

7)

Could the following set of numbers be the measures of the sides of a right triangle: 5, 12, 13?



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

$5^2+12^2=13^2$

$25+144=169$

$169=169$ ✓

This side is c b/c it's the biggest #

yes, it is a right triangle b/c the lengths of the sides of the triangle satisfy the pythagorean theorem

8)

Could the following set of numbers be the measures of the sides of a right triangle: 7, 24, 26?

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

$7^2+24^2=26^2$

$49+576=676$

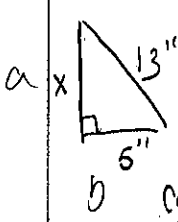
$625 \neq 676$

This side is c b/c it's the biggest #

NO, it is <u>not</u> a right triangle b/c the lengths of the sides of the triangle <u>do not</u> satisfy the pythagorean theorem

9)

A book that is 13 inches tall is leaning against the edge of a wall. If the bottom of the book is 5 inches from the wall, how far up the wall is the top of the book?



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

$a^2+5^2=13^2$

$a^2+25=169$

$-25 \quad -25$

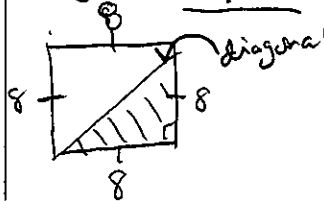
$\sqrt{a^2}=\sqrt{144}$

$a=12$ inches

Can use a or x

10)

To the nearest tenth of an inch, find the length of a diagonal of a square whose side length is 8 inches.



All sides are equal in a square

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

$8^2+8^2=c^2$

$64+64=c^2$

$\sqrt{128}=\sqrt{c^2}$

$c=11.3$ inches