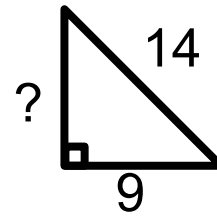
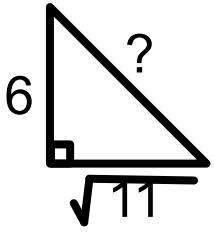


Warm up Gr 8

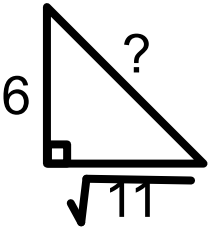
Find missing side value?



Can a triangle with side lengths of 15cm, 20cm and 25cm form a right triangle?

Warm up Gr 8

Find missing side value?



Given
 $a = 6$
 $b = \sqrt{11}$
 $c = ?$

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

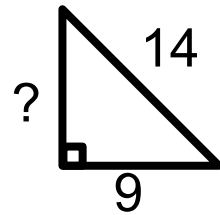
$$c^2 = (6)^2 + (\sqrt{11})^2$$

$$c^2 = 36 + 11$$

$$c^2 = 47$$

$$\sqrt{c^2} = \sqrt{47}$$

$$c = 6.8$$



Given
 $c = 14$
 $b = 9$
 $a = ?$

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

$$a^2 = (14)^2 - (9)^2$$

$$a^2 = 196 - 81$$

$$a^2 = 115$$

$$\sqrt{a^2} = \sqrt{115}$$

$$a = 10.7$$

Can a triangle with side lengths of 15cm, 20cm and 25cm form a right triangle?

$$c^2 \left\{ \begin{array}{l} a^2 + b^2 \\ (15\text{cm})^2 + (20\text{cm})^2 \\ 225\text{cm}^2 + 400\text{cm}^2 \\ 625\text{cm}^2 \end{array} \right.$$

Same → So Right

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

Be careful in 5 the are is given a^2, b^2, c^2

5a) $c^2 = a^2 + b^2$
 $24\text{cm}^2 \quad 15\text{cm}^2 + 9\text{cm}^2$
 $\quad \quad \quad 24\text{cm}^2$

Same so not right Δ

5b) $c^2 = a^2 + b^2$
 $20\text{cm}^2 \quad 11\text{cm}^2 + 7\text{cm}^2$
 $\quad \quad \quad 18\text{cm}^2$

Different so not right Δ

6a) $c^2 = a^2 + b^2$
 $c^2 = (11\text{cm})^2 + (9\text{cm})^2$
 $c^2 = 121\text{cm}^2 + 81\text{cm}^2$
 $c^2 = 306\text{cm}^2$

$\sqrt{c^2} = 202\text{cm}^2$
 $c \quad \sqrt{14.2\text{cm}}$

6b) $a^2 = c^2 - b^2$
 $a^2 = (20\text{cm})^2 - (12\text{cm})^2$
 $a^2 = 400\text{cm}^2 - 144\text{cm}^2$
 $a^2 = 256\text{cm}^2$

$\sqrt{a^2} = 256\text{cm}^2$
 $a \quad \sqrt{16\text{cm}}$

7a) $c^2 = a^2 + b^2$
 $(54)^2 \quad (48)^2 + (20)^2$
 $2916 \quad 2304 + 400$
 $\quad \quad \quad 2704$

Different so Pythagorean triple

7b) $c^2 = a^2 + b^2$
 $(30)^2 \quad (24)^2 + (18)^2$
 $900 \quad 576 + 324$
 $\quad \quad \quad 900$

Same so Pythagorean triple

10a) $c^2 = a^2 + b^2$
 $c^2 = (38\text{m})^2 + (38\text{m})^2$
 $c^2 = 1444\text{m}^2 + 1444\text{m}^2$
 $c^2 = 2888\text{m}^2$

$\sqrt{c^2} = 2888\text{m}^2$
 $c \quad \sqrt{53.7\text{m}}$

$1 \text{ km} = 1000 \text{ m}$

$1000\text{m} \div 53.7 \text{ m} = 18.6 \text{ times}$ so 19 times

Name: _____

Grade 8
Pythagorean Theorem Test REVIEW

Show your work for the following

1. If a right triangle has $a = 17$ and $b = 8$ cm, then what is the measure of the hypotenuse?

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

$$c^2 = 17^2 + 8^2$$

$$c^2 = 289 + 64$$

$$c^2 = 353$$

$$\sqrt{c^2} = \sqrt{353}$$

$$c = 18.8 \text{ cm}$$

2. Evaluate the area of a circle if the radius is 8 cm.

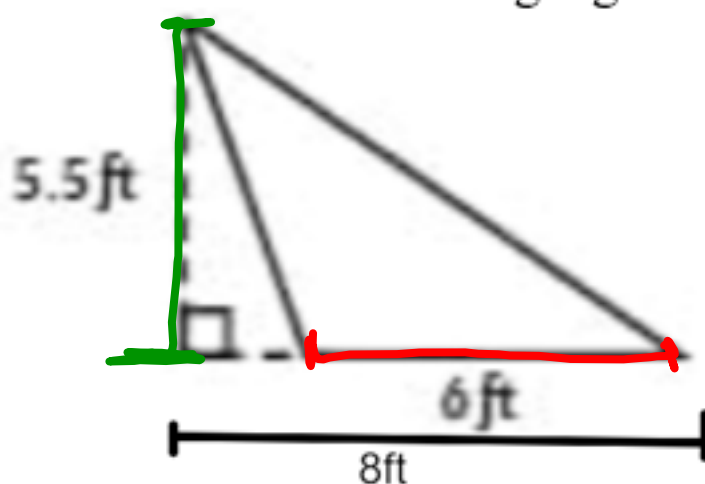
$$A_{\text{circle}} = \pi r^2$$

$$A_{\text{circle}} = 3.14 (8 \text{ cm})^2$$

$$A_{\text{circle}} = 3.14 (64 \text{ cm}^2)$$

$$A_{\text{circle}} = 200.96 \text{ cm}^2$$

3. Evaluate the area of the triangle given the following picture



$$A_{\text{Tri}} = \frac{B \times H}{2}$$

2

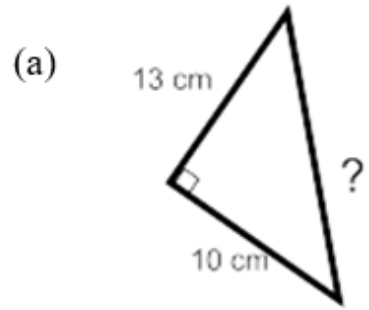
$$A_{\text{Tri}} = \frac{6 \text{ ft} \times 5.5 \text{ ft}}{2}$$

2

$$A_{\text{tri}} = \frac{33 \text{ ft}^2}{2}$$

$$A_{\text{Tri}} = 16.5 \text{ ft}^2$$

4. Find the length of the indicated side in each triangle (SHOW WORK)



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

$$c^2 = (13\text{cm})^2 + (10\text{cm})^2$$

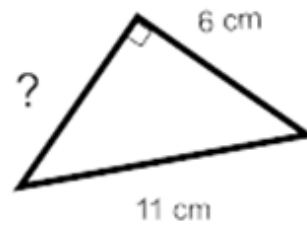
$$c^2 = 169\text{ cm}^2 + 100\text{ cm}^2$$

$$c^2 = 269\text{ cm}^2$$

$$\sqrt{c^2} = \sqrt{269\text{cm}^2}$$

$$c = 16.4\text{ cm}$$

(b)



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

$$a^2 = (11\text{cm})^2 - (6\text{cm})^2$$

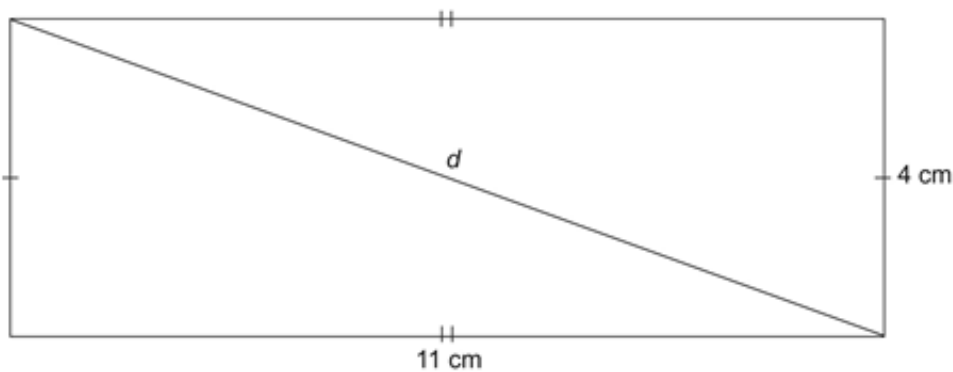
$$a^2 = 121\text{ cm}^2 - 36\text{ cm}^2$$

$$a^2 = 85\text{ cm}^2$$

$$\sqrt{a^2} = \sqrt{85\text{cm}^2}$$

$$a = 9.2\text{ cm}$$

5. Find the length of the diagonal, d, in this rectangle.



Diagonal is c

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

$$c^2 = (11\text{cm})^2 + (4\text{cm})^2$$

$$c^2 = 121\text{ cm}^2 + 16\text{ cm}^2$$

$$c^2 = 137\text{ cm}^2$$

$$\sqrt{c^2} = \sqrt{137\text{cm}^2}$$

$$c = 11.7\text{ cm}$$

6. Determine whether a triangle with each set of side lengths is a right triangle. Justify your answers. (Show work)
8cm, 9 cm, and 11 cm

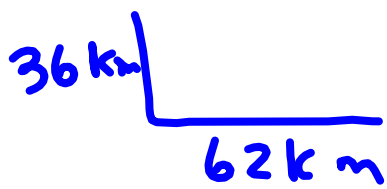
$$c^2 \left\{ \begin{array}{l} a^2 + b^2 \\ (11\text{cm})^2 \\ 121\text{cm}^2 \end{array} \right. \left\{ \begin{array}{l} (8\text{cm})^2 + (9\text{cm})^2 \\ 64\text{cm}^2 + 81\text{cm}^2 \\ 145\text{cm}^2 \end{array} \right.$$

Not Same
So Not Right \triangle

8. A trucker has two companies to choose to work at.
 Company A follows route 1 and pays \$15/km
 Company B follows route 2 and pays \$19/km



- a) What is the trucker's pay if he goes with company A?



$$36 \text{ km} + 62 \text{ km} = 98 \text{ km}$$

Pay
 $98 \text{ km} \times \$15/\text{km}$
\$1470

- b) What is the trucker's pay if he goes with company B?
 (Note: this requires 2 steps)

Route 2 $\Rightarrow c$

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

$$c^2 = (62 \text{ km})^2 + (36 \text{ km})^2$$

$$c^2 = 3844 \text{ km}^2 + 1296 \text{ km}^2$$

$$c^2 = 5140 \text{ km}^2$$

$$\sqrt{c^2} = \sqrt{5140 \text{ km}^2}$$

$c = 71.7 \text{ km}$

Pay is
 $71.7 \text{ km} \times \$19/\text{km}$
 \$1362.30

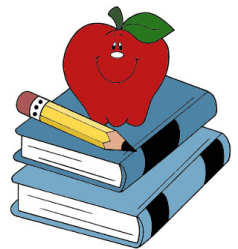
- c) Which is the better option? Explain

Company A is a better option since it pays more.

$$A_{\text{circle}} = \pi r^2$$
$$A_{\Delta} = \frac{B \times H}{2}$$



Class/Homework



$$SA_{\text{cylinder}} = 2\pi r^2 + 2\pi r h$$

$$Vol_{\text{cyl}} = \pi r^2 h$$

Start with #25 go backwards

Worksheet: Unit 1 Test Review (Pythagorean & Cylinders)

Solutions To Ws

Unit 1 Test

Thursday, Nov. 29

STUDY

Must Study Perfect Square #
Not given on test

Test Outline

→ 5 MC

→ 9 Short Response

→ given # of factors
determine if # is
a perfect square

→ product of perfect
squares

$$\text{Ex } \sqrt{400} = \sqrt{4 \times 100}$$
$$= \sqrt{4} \times \sqrt{100}$$
$$= 2 \times 10$$
$$= 20$$

→ Find $\sqrt{\quad}$ of #
using product
of primes
(tree)

→ use $c^2 = a^2 + b^2$
or
 $a^2 = c^2 - b^2$

find ^{to} length of
missing side of
right Δ

→ Diagonal length

→ Know difference
of square
and

Square root
($\sqrt{\quad}$)

→ Estimate $\sqrt{\quad}$ of
non-perfect square #
Show work

→ word problem similar
to warm up today