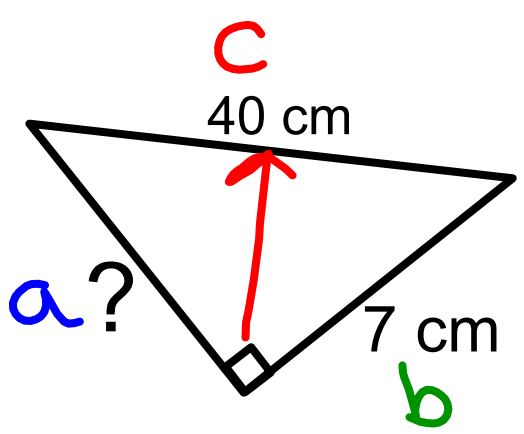
Warm Up Grade 8

Date:_____

Find the length of the missing side (Use calculators but show your work)

You can use your notes

a)



Given

$c = 40cm$

$b = 7cm$

$a = ?$

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

$a^2 = (40cm)^2 - (7cm)^2$

$a^2 = 1600cm^2 - 49cm^2$

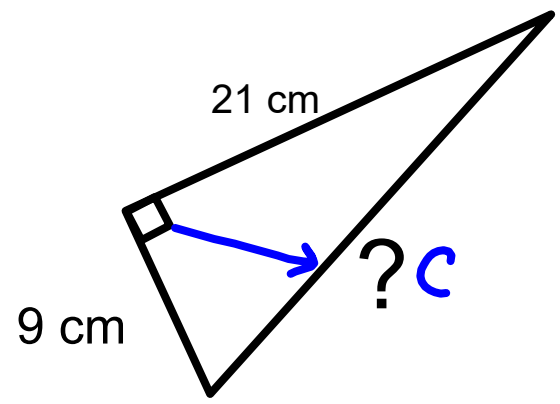
$a^2 = 1551cm^2$

$\sqrt{a^2} = \sqrt{1551cm^2}$

$a \approx 39.38cm$

$a \approx 39.4cm$

b)



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

$c^2 = (9cm)^2 + (21cm)^2$

$c^2 = 81cm^2 + 441cm^2$

$c^2 = 522cm^2$

$\sqrt{c^2} = \sqrt{522cm^2}$

$c \approx 22.84cm$

$c \approx 22.8cm$

Warm Up Grade 8

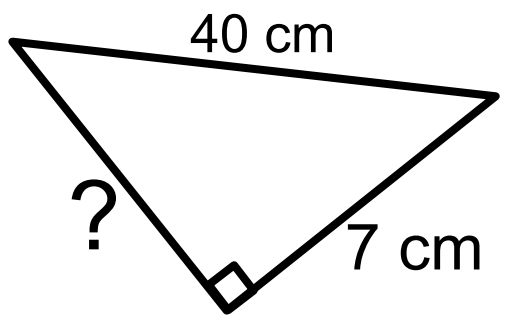
Date:_____

TEST
Tuesday
Feb 27

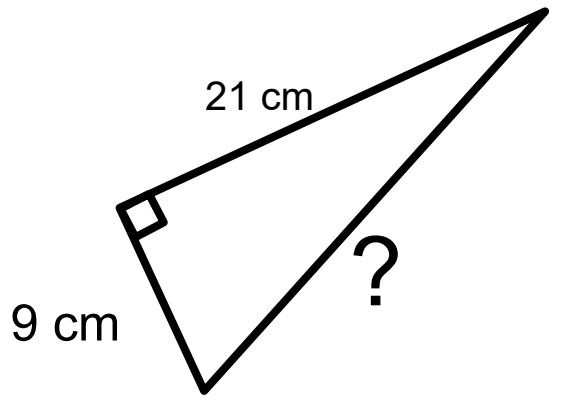
Find the length of the missing side (Use calculators but show your work)

You can use your notes

a)



b)



Given
$a = ?$
$b = 7\,cm$
$c = 40\,cm$ (0.5)

$a^2 = c^2 - b^2$
$a^2 = (40\,cm)^2 - (7\,cm)^2$ (0.5)
$a^2 = 1600\,cm^2 - 49\,cm^2$ (1)
$a^2 = 1551\,cm^2$ (0.5)
$\sqrt{a^2} = \sqrt{1551\,cm^2}$ (1)
$a \approx 39.4\,cm$ (0.5)

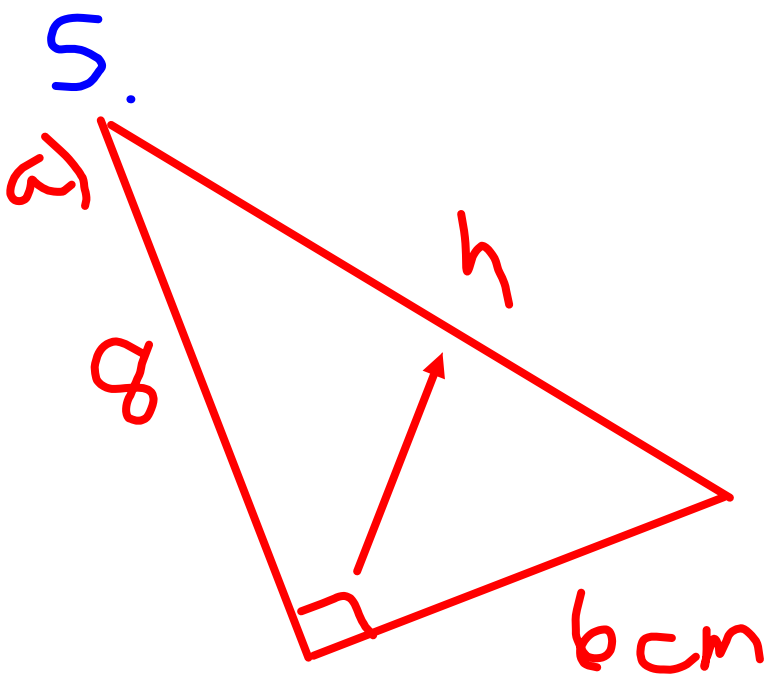
Given
$a = 9\,cm$
$b = 21\,cm$
$c = ?$

$c^2 = a^2 + b^2$
$c^2 = (9\,cm)^2 + (21\,cm)^2$
$c^2 = 81\,cm^2 + 441\,cm^2$
$c^2 = 522\,cm^2$
$\sqrt{c^2} = \sqrt{522\,cm^2}$
$c \approx 22.8\,cm$

Quiz Tomorrow
Quiz 2 in folder

5.

a)



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

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

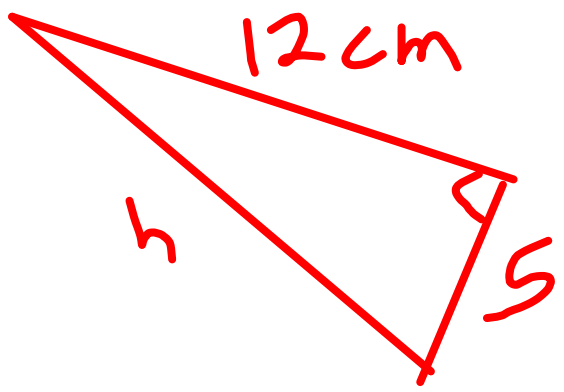
$c^2 = 64 + 36$

$c^2 = 100$

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

$c = 10\,cm$

b)



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

$c^2 = 12^2 + 5^2$

$c^2 = 144 + 25$

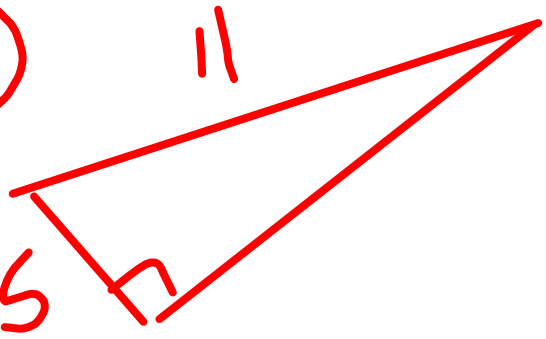
$c^2 = 169$

$\sqrt{c^2} = \sqrt{169}$

$c = 13\,cm$

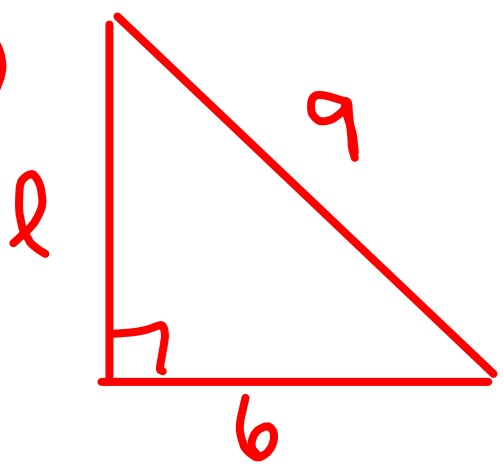
6

c)



$$c^2 = a^2 + b^2$$
$$11^2 = a^2 + 5^2$$
$$121 = a^2 + 25$$
$$121 - 25 = a^2 + 25 - 25$$
$$96 = a^2$$
$$\sqrt{96} = \sqrt{a^2}$$
$$9.8 = a$$

d)

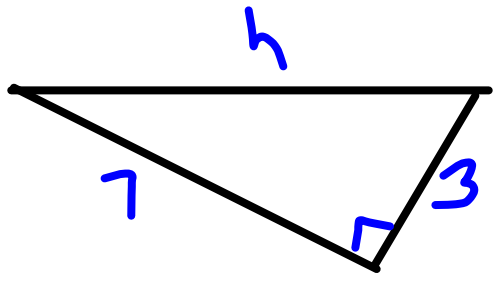


$$c^2 = a^2 + b^2$$
$$9^2 = a^2 + 6^2$$
$$81 = a^2 + 36$$
$$81 - 36 = a^2 + 36 - 36$$
$$45 = a^2$$
$$\sqrt{45} = \sqrt{a^2}$$
$$6.7 = a$$

Homework solutions

Pg 34

7a)



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

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

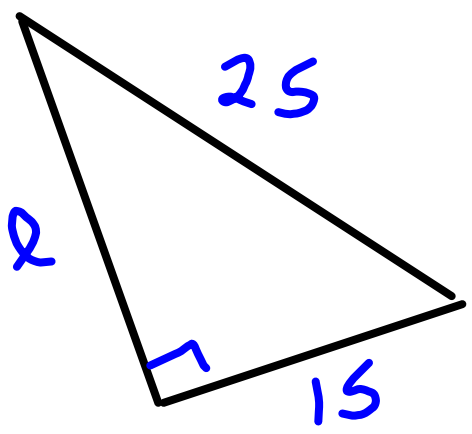
$c^2 = 49 + 9$

$c^2 = 58$

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

$c = 7.6$

b)



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

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

$625 = a^2 + 225$

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

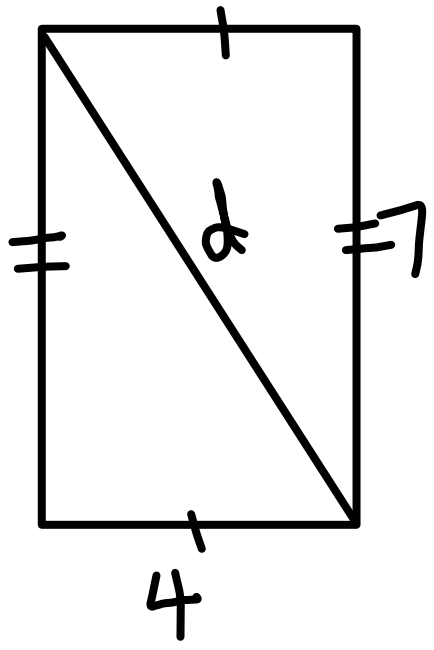
$400 = a^2$

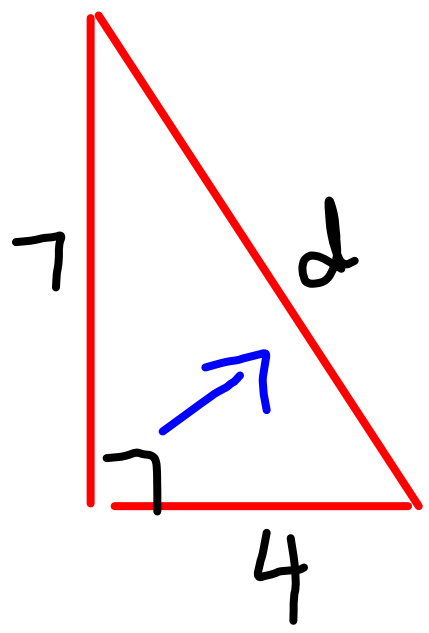
$\sqrt{400} = \sqrt{a^2}$

$20 = a$

8

a)





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

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

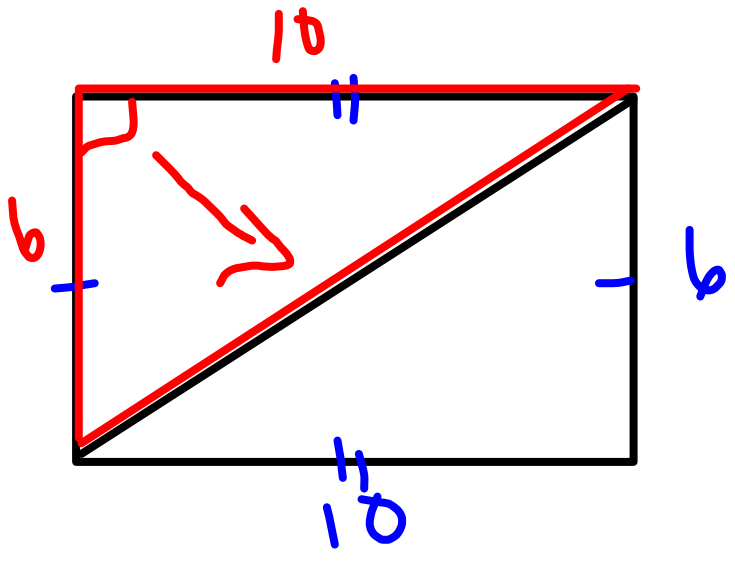
$c^2 = 49 + 16$

$c^2 = 65$

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

$c = 8.1$

b)



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

$c^2 = 10^2 + 6^2$

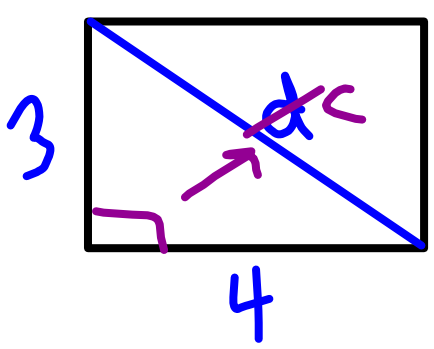
$c^2 = 100 + 36$

$c^2 = 136$

$\sqrt{c^2} = \sqrt{136}$

$c = 11.7$

9a)



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

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

$c^2 = 9 + 16$

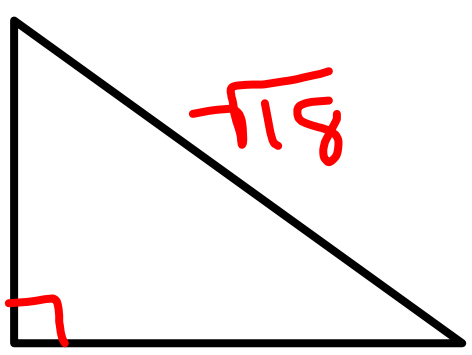
$c^2 = 25$

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

$c = 5$

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.

12.



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

$(\sqrt{18})^2 = a^2 + b^2$

$18 = a^2 + b^2$

$9 \cdot 9 = 18$

$9 = a^2 \quad 9 = b^2$

$3 = a \quad 3 = b$

$6 + 12 = 18$

$a^2 = 6 \quad b^2 = 12$

$a = \sqrt{6} \quad b = \sqrt{12}$

$10 + 8 = 18$

$a^2 = 10 \quad b^2 = 8$

$\sqrt{a^2} = \sqrt{10}$

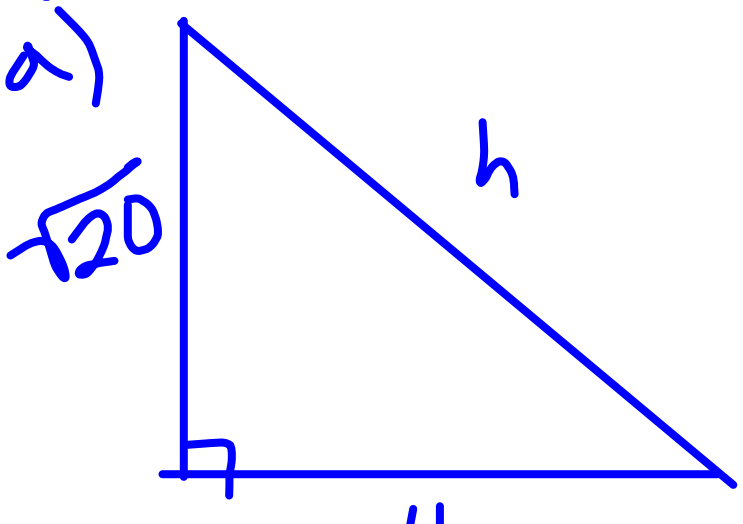
$1 + 17 = 18$

$a^2 = 1 \quad b^2 = 17$

$a = \sqrt{1} \quad b = \sqrt{17}$

13.

a)



$\sqrt{20} \times \sqrt{20}$

$\sqrt{20 \times 20}$

20

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

$c^2 = (\sqrt{20})^2 + 4^2$

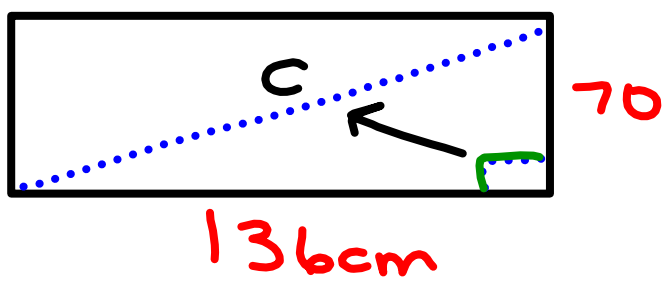
$c^2 = 20 + 16$

$c^2 = 36$

$\sqrt{c^2} = \sqrt{36}$

$c = 6$

Can a rectangular hockey bag with dimensions of 136 cm by 70 cm, hold a hockey stick of lengths 150 cm?



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

$c^2 = (136cm)^2 + (70cm)^2$

$c^2 = 18496cm^2 + 4900cm^2$

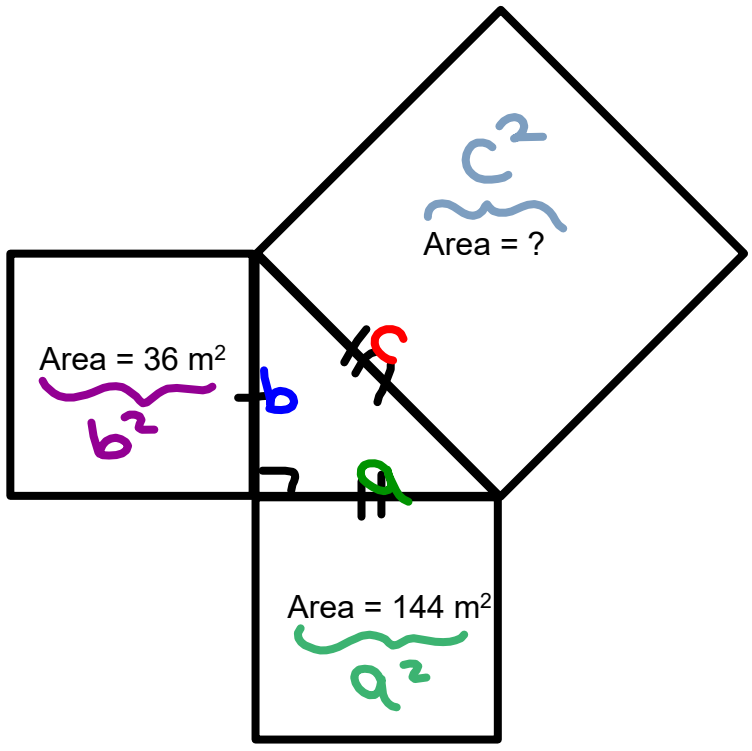
$c^2 = 23\,396cm^2$

$\sqrt{c^2} = \sqrt{23\,396cm^2}$

$c = 152.96cm$

So the hockey stick will fit in the bag.

Find the area of the indicated square



Given

$a^2 = 144\,m^2$

$b^2 = 36m^2$

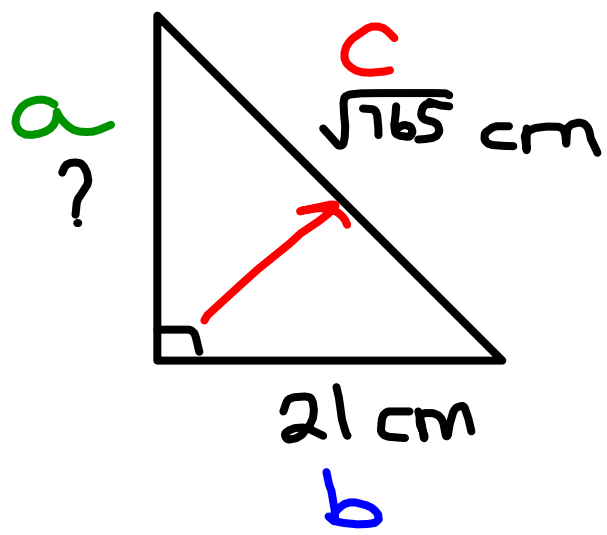
$c^2 = ?$

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

$c^2 = 144m^2 + 36m^2$

$c^2 = 180m^2$

Find the length of the missing side



Given

$c = \sqrt{765}$ cm

$b = 21$ cm

$a = ?$

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

$$a^2 = (\sqrt{765}\text{ cm})^2 - (21\text{ cm})^2$$

$$a^2 = 765\text{cm}^2 - 441\text{cm}^2$$

$$a^2 = 324\text{cm}^2$$

$$\sqrt{a^2} = \sqrt{324\text{cm}^2}$$

$$\boxed{a = 18\text{ cm}}$$

Different from last day with supply

Class/Homework

pg. 34 - 35

Friday ↓ redo if wrong

5(c,d), 6(a,b) ,7(c), 8(c), 9(b,c), 10, 12, 13(c)

Answers Pg 498

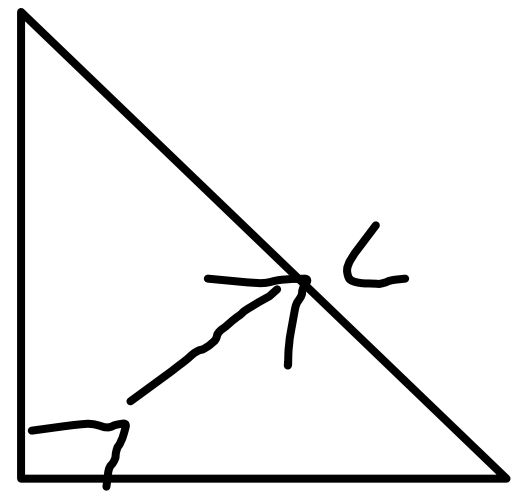
REMEMBER

$(\sqrt{20})^2 = 20$

$\sqrt{20} \times \sqrt{20}$

$\sqrt{20 \times 20}$

20



Make sure to check if you are finding c or a