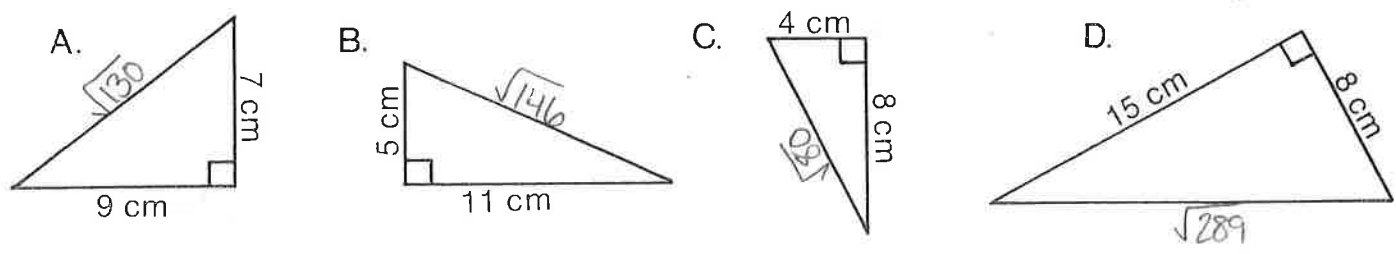NAME __Key_____ Per. ___ Date _____

What Do Two Bullets Have When They Get Married?

Work each problem and find your answers at the bottom of the page. Shade out the letter above each correct answer. When you finish, the answer to the title question will remain.

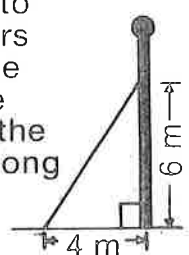① Find the length of the hypotenuse of each right triangle:

A. $\sqrt{130}$, 7 cm, 9 cm

B. 5 cm, $\sqrt{146}$, 11 cm

C. 4 cm, 8 cm, $\sqrt{80}$

D. 15 cm, 8 cm, $\sqrt{289}$

② A rectangle is 3 meters wide and 10 meters long. How long is the diagonal of the rectangle?

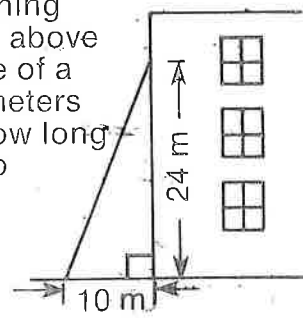③ A rectangle is 13 centimeters wide and 18 centimeters long. How long is its diagonal?

④ A guy wire is attached to an upright pole 6 meters above the ground. If the wire is anchored to the ground 4 meters from the base of the pole, how long is the wire?

(diagram: 6 m, 4 m)

⑤ A television screen measures 30 cm wide and 22 cm high. What is the diagonal measure of the screen?

⑥ A ship leaves port and sails 12 kilometers west and then 19 kilometers north. How far is the ship from port?

⑦ Each side of a checkerboard measures 40 cm. What is the length of its diagonal?

⑧ An inclined ramp rises 4 meters over a horizontal distance of 9 meters. How long is the ramp?

(diagram: 4 m, 9 m)

⑨ A box is 120 cm long and 25 cm wide. What is the length of the longest ski pole that could be packed to lie flat in the box?

⑩ The window of a burning building is 24 meters above the ground. The base of a ladder is placed 10 meters from the building. How long must the ladder be to reach the window?

(diagram: 24 m, 10 m)

T	H	E	F	B	I	H	A	S	B	E	D	B	U	G	S
$\sqrt{15025}$ cm $\doteq 122.6$ cm	$\sqrt{493}$ cm $\doteq 22.2$ cm	$\sqrt{80}$ cm $\doteq 8.94$ cm	$\sqrt{676}$ m $= 26$ m	$\sqrt{52}$ m $\doteq 7.21$ m	$\sqrt{130}$ cm $\doteq 11.4$ cm	$\sqrt{289}$ cm $= 17$ cm	$\sqrt{514}$ km $\doteq 22.7$ km	$\sqrt{97}$ m $\doteq 9.85$ m	$\sqrt{15145}$ cm $\doteq 123.1$ cm	$\sqrt{505}$ km $\doteq 22.5$ km	$\sqrt{3200}$ cm $\doteq 56.6$ cm	$\sqrt{664}$ m $\doteq 25.8$ m	$\sqrt{146}$ cm $\doteq 12.1$ cm	$\sqrt{109}$ m $\doteq 10.4$ m	$\sqrt{1384}$ cm $\doteq 37.2$ cm

SET UP AND SOLVE AN EQUATION FOR THE PROBLEMS ON THE FRONT. USE THE
PYTHAGOREAN THEOREM. YOU MUST SHOW ALL WORK!! DRAW PICTURES TO HELP YOU!!
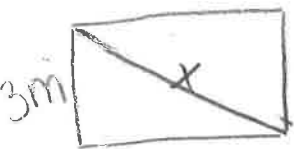

#1

a) $7^2 + 9^2 = c^2$
$49 + 81 = c^2$
$130 = c^2$
$\sqrt{130} = c$
    cm

b) $5^2 + 11^2 = c^2$
$25 + 121 = c^2$
$146 = c^2$
$\sqrt{146} = c$
    cm

c) $4^2 + 8^2 = c^2$
$16 + 64 = c^2$
$80 = c^2$
$cm\sqrt{80} = c$

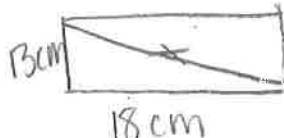d) $15^2 + 8^2 = c^2$
$225 + 64 = c^2$
$289 = c^2$
$cm\sqrt{289} = c$

#2

3m   10 m   ✗

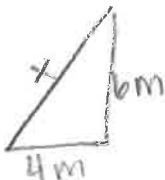$3^2 + 10^2 = x^2$
$9 + 100 = x^2$
$109 = x^2$

$x = \sqrt{109}\,m$

#3

13cm   18 cm   ✗

$13^2 + 18^2 = c^2$
$169 + 324 = c^2$
$493 = c^2$
$\sqrt{493}\,cm = c$

#4

x   6m   4 m

$4^2 + 6^2 = x^2$
$16 + 36 = x^2$
$52 = x^2$
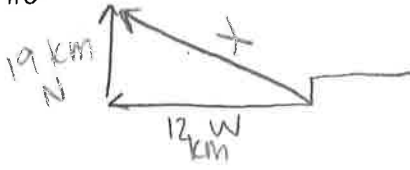$\sqrt{52}\,m = x$

#5

22cm   30 cm   ✗

$22^2 + 30^2 = x^2$
$484 + 900 = x^2$
$1384 = x^2$
$\sqrt{1384}\,cm = x$

#6

19 km N   12 km W   ✗

$19^2 + 12^2 = x^2$
$361 + 144 = x^2$
$505 = x^2$
$\sqrt{505}\,km = x$

#7

40 cm   40 cm   ✗

$40^2 + 40^2 = x^2$
$1600 + 1600 = x^2$
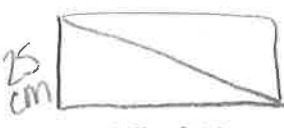$3200 = x^2$
$\sqrt{3200}\,m = x$

#8

x   4m   9 m.

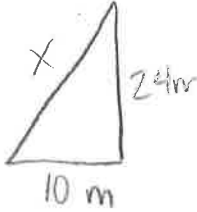$4^2 + 9^2 = x^2$
$16 + 81 = x^2$
$97 = x^2$
$\sqrt{97}\,m = x$

#9

25 cm   120 cm

$25^2 + 120^2 = x^2$
$625 + 14400 = x^2$
$15025 = x^2$
$\sqrt{15025}\,cm = x$

#10

x   24m   10 m

$10^2 + 24^2 = x^2$
$100 + 576 = x^2$
$676 = x^2$
$\sqrt{676}\,m = x$