Date: _____ ___/30 Name: _____

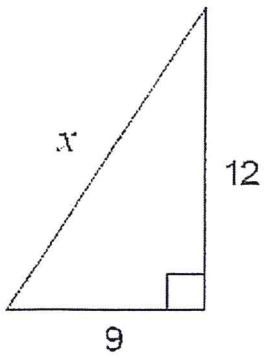
Pythagorean Theorem Assignment

A) Calculate the measure of x in each.

Where necessary, round you answer correct to one decimal place.

Complete on a separate piece of paper.

1.



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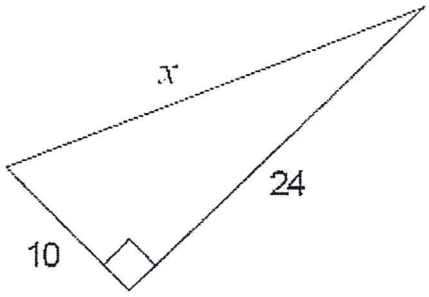

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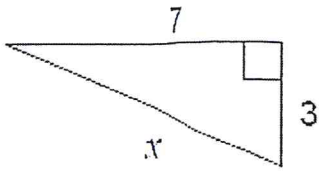

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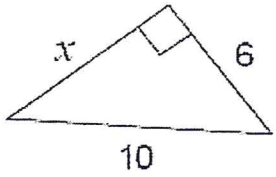

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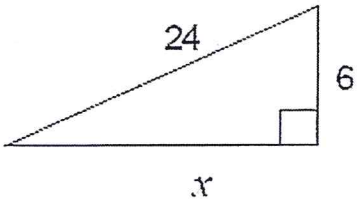

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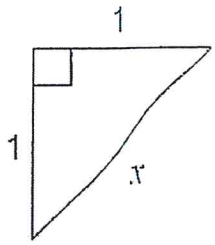

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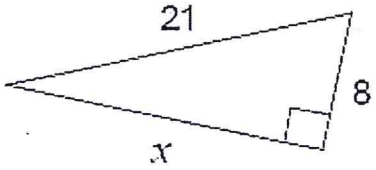

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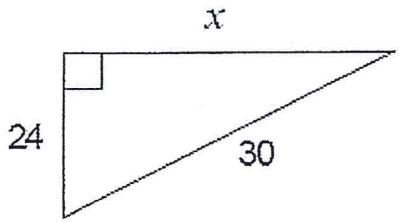

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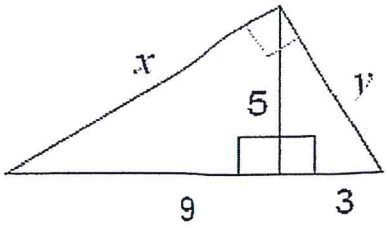
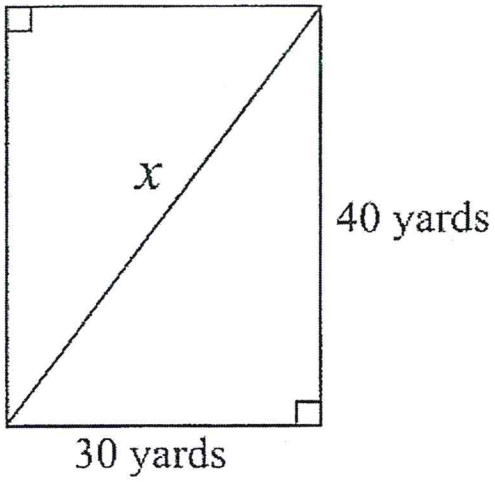


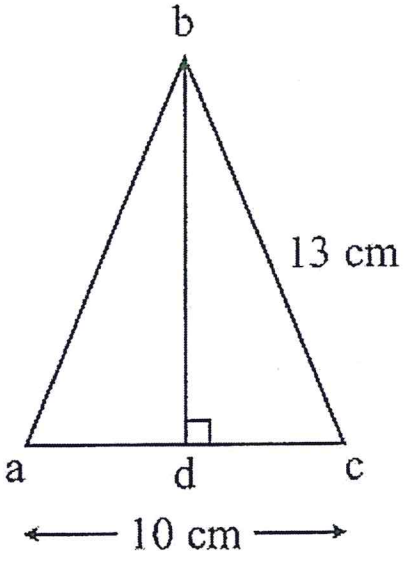
B) A ladder is leaning against the side of a 10m house. If the base of the ladder is 3m away from the house, how tall is the ladder?

Draw a diagram and show all work.

C) What is the length of the diagonal?



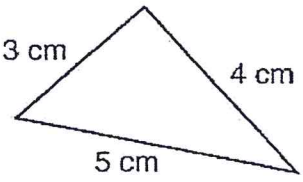
D) What is the length of bd?



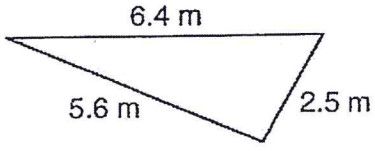
E) Use the Pythagorean Theorem to find out if these are right triangles.

Justify your answers.

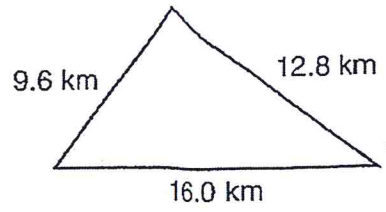
a)



b)



c)



Date: Key ___/30 Name: _____

Pythagorean Theorem Assignment

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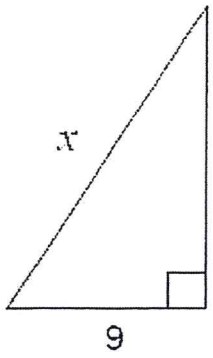
Where necessary, round you answer correct to one decimal place.

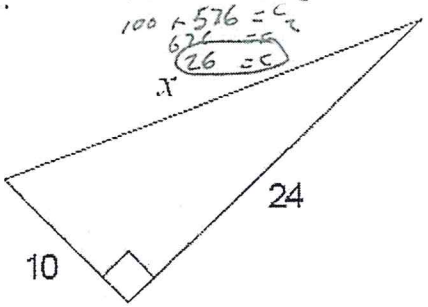
Complete on a separate piece of paper.

1.



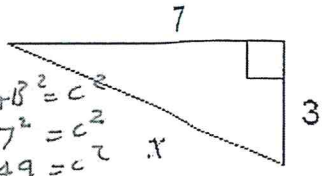
$A^2+B^2=C^2$
$9^2+12^2=c^2$
$81+144=c^2$
$225=c^2$
$15=c$

2.



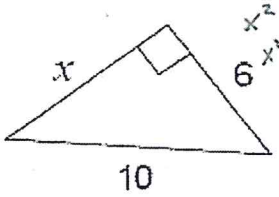
$A^2+B^2=C^2$
$10^2+24^2=c^2$
$100+576=c^2$
$676=c^2$
$26=c$

3.



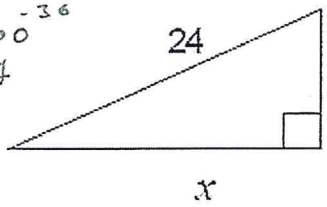
$A^2+B^2=C^2$
$3^2+7^2=c^2$
$9+49=c^2$
$58=c^2$
$7.62=c$

4.



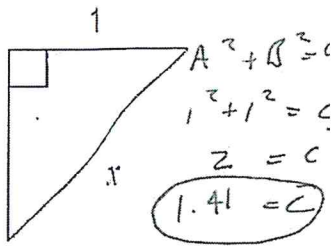
$A^2+B^2=c^2$
$x^2+6^2=10^2$
$x^2+36=100$
$-36 \quad -36$
$x^2=64$
$x=8$

5.



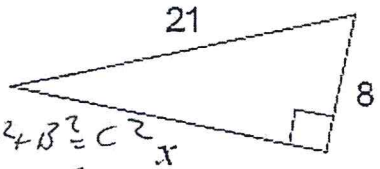
$A^2+B^2=C^2$
$6^2+x^2=24^2$
$-36 \quad -36$
$x^2=576$
$x=23.24$

6.



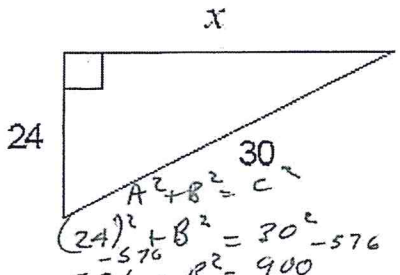
$A^2+B^2=c^2$
$1^2+1^2=c^2$
$2=c$
$1.41=c$

7.



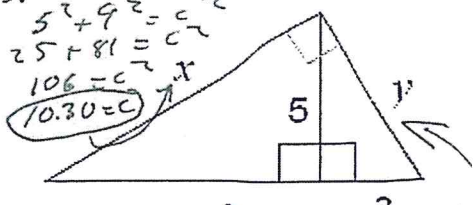
$A^2+B^2=C^2$
$8^2+x^2=21^2$
$-64 \quad -64$
$x^2=441$
$x=377$
$x=19.42$

8.



$A^2+B^2=C^2$
$(24)^2+B^2=30^2$
$-576 \quad -576$
$576+B^2=900$
$B^2=324$
$B=18$

9.

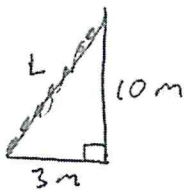


$A^2+B^2=C^2$
$5^2+9^2=c^2$
$25+81=c^2$
$106=c^2$
$10.30=c$

$A^2+B^2=C^2$
$3^2+5^2=c^2$
$9+25=c^2$
$34=c^2$
$5.83=c$

B) A ladder is leaning against the side of a 10m house. If the base of the ladder is 3m away from the house, how tall is the ladder?

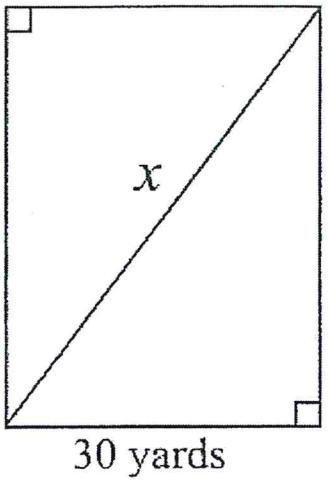
Draw a diagram and show all work.



$A^2+B^2=C^2$
$(3m)^2+(10m)^2=L^2$
$9m^2+100m^2=L^2$
$109m^2=L^2$
$10.44m=L$

The ladder is 10.44m tall.

C) What is the length of the diagonal?



$A^2+B^2=C^2$

$(30yd)^2+(40yd)^2=x^2$

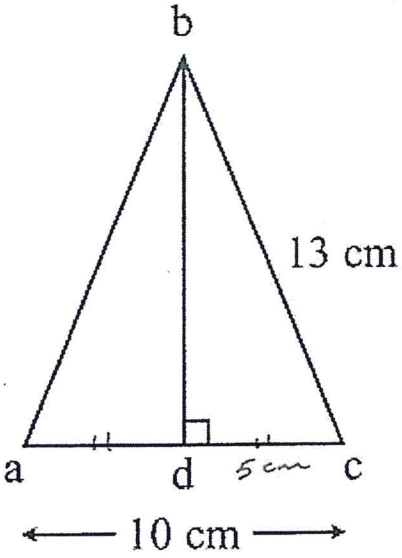
$900yd^2+1600yd^2=x^2$

$2500yd^2=x^2$

$50yd=x$

The diagonal is 50yd long.

D) What is the length of bd?



Assume d is midpoint of Ac

∴ AC is 10cm

∴ BC is 5 cm

$A^2+B^2=C^2$

$(dc)^2+(bd)^2=(BC)^2$ ← not necessary

$(5cm)^2+(bd)^2=(13cm)^2$

$25cm^2+bd^2=169cm^2-25cm^2$

$bd^2=144cm^2$

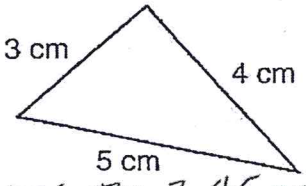
$bd=12cm$

The length of bd is 12 cm.

E) Use the Pythagorean Theorem to find out if these are right triangles.

Justify your answers.

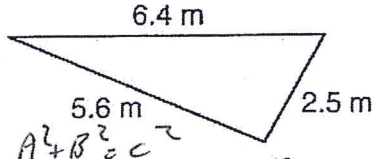
a)



has the 3, 4, 5 pattern

∴ right triangle

b)



$A^2+B^2=C^2$

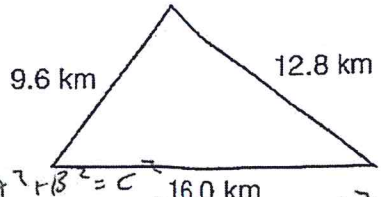
$(2.5m)^2+(5.6m)^2=(6.4m)^2$

$6.25m^2+31.36m^2=40.96m^2$

$37.61m^2=40.96m^2$

∴ not right Angle

c)



$A^2+B^2=C^2$

$(9.6km)^2+(12.8km)^2=(16.0km)^2$

$92.16km^2+163.84km^2=256km^2$

$256km^2=256km^2$