IM 2 Ch. 4 Review#1   NAME:

1. Factor each quadratic expression using a generic rectangle and a diamond problem.   Clearly show all steps.

a) $x^2 - 5x - 50$ b) $3x^2 + 7x - 6$ c) $4x^2 - 9$ d) $4x^2 + 4x + 1$

2. Factor each expression using the GCF (Greatest Common Factor.)

a) $20x + 15$ b) $8x^2 + 12x$ c) $7x^3 + 21x^2 - 7x$ d) $3x^2 - 6x - 15$

3. <u>Completely</u> factor the given expression using the GCF and then a generic rectangle & diamond problem. Clearly show all steps.

a) $2x^3 + 10x^2 - 28x$ = ____(   ) = ____(   )(   )

b) $6x^3 - 9x^2 - 15x$ = ____(   ) = ____(   )(   )

4. Solve each **system of equations** for x <u>and</u> y. Show work and express your solution as an ordered pair (x, y).

a) $y = 3x - 1$ (,   )   b) $x = 2y - 1$ (,   )   c) $x + y = 5$ (,   )
      $y = -x + 5$ pt. of intersection $2x + 4y = -26$ pt. of intersection $2x + 3y = 12$ pt. of intersection

5. Find the **height, perimeter and area**. Show all work!

Height: _____

Perimeter: _____

Area: _____

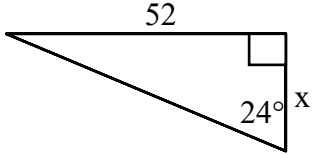[Figure: trapezoid with 60° angle, side 8', bottom 12', right angles on right side]
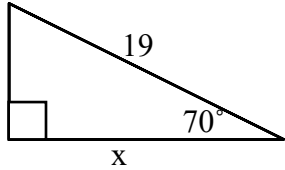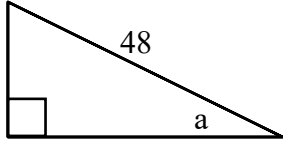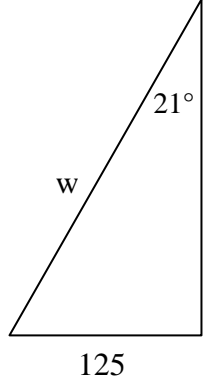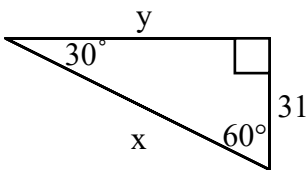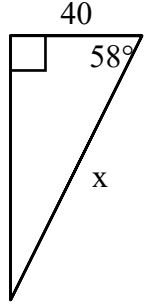
6. In which room should you place the cheese so that Romeo will have the best chance of finding the cheese? Justify your answer by giving the probabilities of wandering into each room.
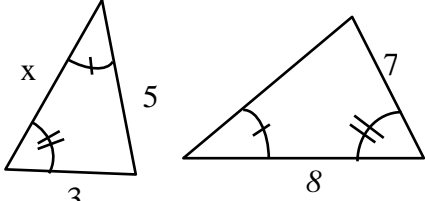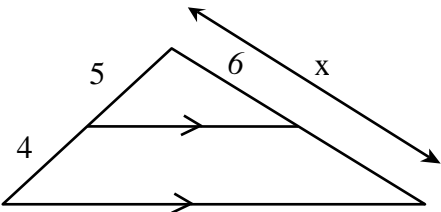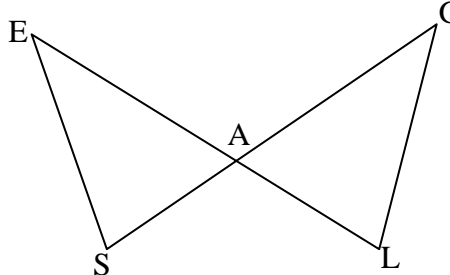
P(Room A) = _____   P(Room B) = _____

[Figure: tree diagram leading to rooms labeled **A** and **B**]
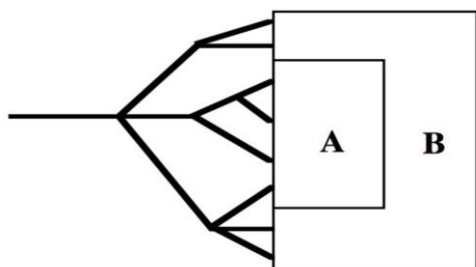
7. In each diagram write an equation and solve for the variable. Show your work. You must include the Trig ratio used.

a)

19
70°
x

b)

48
20
a

c)

52
24° x

d)

21°
w
125

e)

y
30°
31
x   60°

f)

40
58°
y   x

8. Find the missing side.

a)

x
5
3
7
8

b)

5   6   x
4

9. Prove the following using a flowchart. Include all of your reasons to support your statements. Mark the congruent parts in the figure

Given: $\overline{EA} \cong \overline{GA}$ Prove: $\triangle EAS \cong \triangle GAL$
          $\overline{SA} \cong \overline{LA}$

E
G
A
S
L

Check Problems
 # 7, 8, & 10

10.8	6.5
348.8	24.6
75.5	3.4
116.8	64.0
62	53.7
$\dfrac{13}{20}$	$\dfrac{7}{20}$

10. Suppose you spin both spinners once. If the letters on both spins match, then you win.
    a. What is the probability that you will win? Show work.   b. What is the probability you will lose? Show work.

Spinner 1

P   P
V   P
V

Spinner 2

P
H   V
V