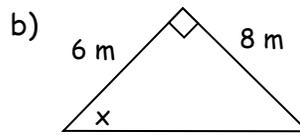
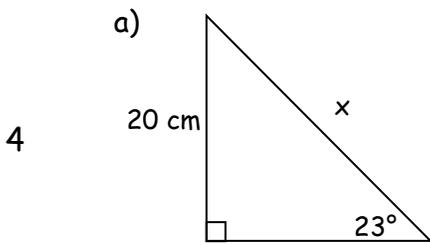


Sure Bets #2 - Trigonometry and Systems

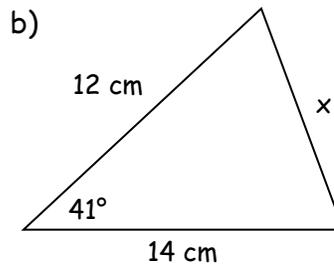
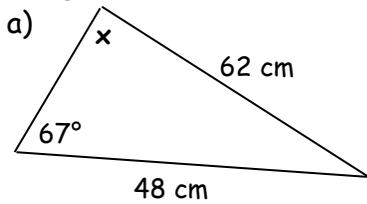
1. Using SOHCAHTOA, solve the following right triangles for the indicated unknown value:



2. The highest dam in Canada is the Mica Dam, one of the three dams on the Columbia River in British Columbia. From a point 600 m from the foot of the dam, the angle of elevation of the top of the dam is 22° . Draw an appropriate diagram, then find the height of the dam.

3

3. Using the Sine Law or Cosine Law, solve for the indicated variable in:



3,2

4. An architect designed a house that is 12 m wide. The rafters that support the roof are equal in length and meet at an angle of 70° . How long is each rafter?

4

5. Two planes left Toronto at the same time. One traveled at 450 km/h, the other traveled at 550 km/h. After 2 hours, they were 1000 km apart. What was the angle between their courses?

4

6. Determine if (3,-4) is the solution to:

$$2x - y = 10$$

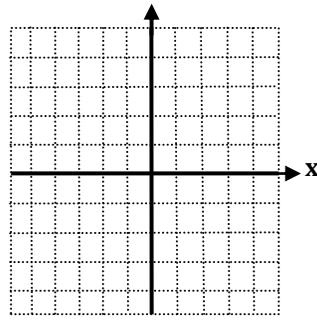
$$x + 3y = 9$$

3

7. Solve the following systems by graphing:

$$y = \frac{-1}{2}x + 1$$

$$2x - y = 4$$



3

8. Solve by an appropriate algebraic method (substitution, comparison or elimination).

a) $y = 3x - 4$

$$y = 2x + 7$$

b) $x = 2y - 5$

$$3x - y = -10$$

c) $2x + 3y = 4$

$$x - 3y = 2$$

9

To receive full marks, use good problem solving techniques when solving the two word problems.

9. The coin box of a vending machine contains \$6.20 in dimes and quarters. There are 32 coins in all. How many of each kind are there?

6

10. It took the high school volleyball team 5 hours to travel to a tournament. They travelled by bus and plane a total of 1320 km. If the bus averaged 40 km/h and the plane averaged 600 km/h, determine the time they spent travelling by plane.

6