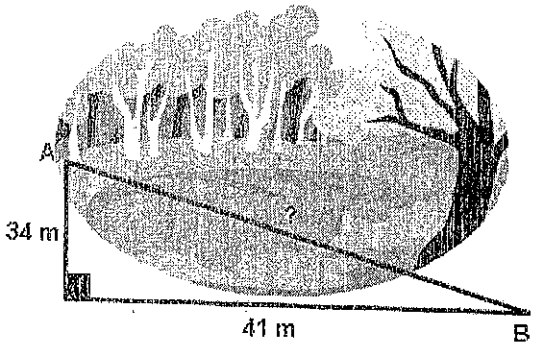
Name: _____ Date: _____

Pythagorean Theorem

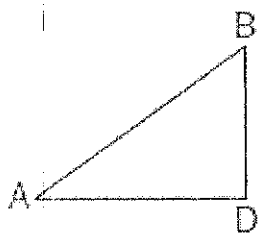
1.



To get from point A to point B you must avoid walking through a pond. To avoid the pond, you must walk 34 meters south and 41 meters east. To the *nearest meter*, how many meters would be saved if it were possible to walk through the pond?

2. The lengths of the sides of a right triangle can be
   1) 9,12,15
   2) 8,10,13
   3) 5,5,10
   4) 4,5,6

3. In the diagram below of $\triangle ADB$, $m\angle BDA = 90$, $AD = 5\sqrt{2}$, and $AB = 2\sqrt{15}$.

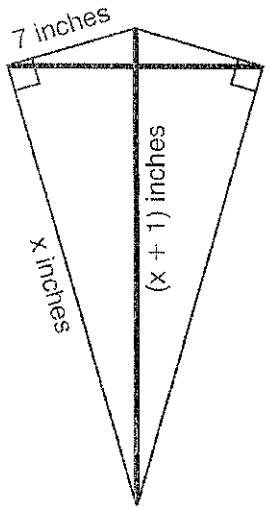


What is the length of $\overline{BD}$?

4. Which set of numbers could *not* represent the lengths of the sides of a right triangle?

1) $\{1, 3, \sqrt{10}\}$
2) $\{2, 3, 4\}$
3) $\{3, 4, 5\}$
4) $\{8, 15, 17\}$

5. As shown in the diagram below, a kite needs a vertical and a horizontal support bar attached at opposite corners. The upper edges of the kite are 7 inches, the side edges are x inches, and the vertical support bar is $(x + 1)$ inches.

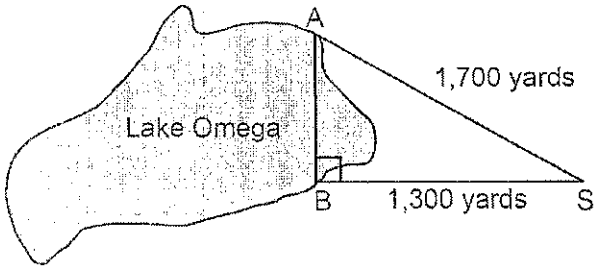


What is the measure, in inches, of the vertical support bar?

6. The legs of an isosceles right triangle each measure 10 inches. What is the length of the hypotenuse of this triangle, to the *nearest tenth of an inch*?

7. The length of one side of a square is 13 feet. What is the length, to the *nearest foot*, of a diagonal of the square?

8. Campsite *A* and campsite *B* are located directly opposite each other on the shores of Lake Omega, as shown in the diagram below. The two campsites form a right triangle with Sam's position, *S*. The distance from campsite *B* to Sam's position is 1,300 yards, and campsite *A* is 1,700 yards from his position.



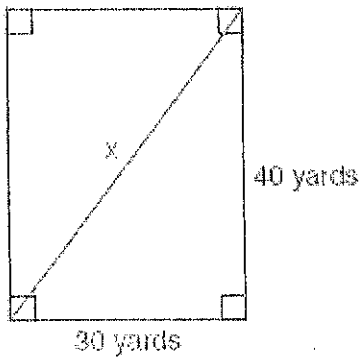
What is the distance from campsite *A* to campsite *B*, to the *nearest yard*?

9. In triangle RST, angle R is a right angle. If $TR = 6$ and $TS = 8$, what is the length of $\overline{RS}$?

10. In a computer catalog, a computer monitor is listed as being 19 inches. This distance is the diagonal distance across the screen. If the screen measures 10 inches in height, what is the actual width of the screen to the *nearest inch*?

11. A suitcase measures 24 inches long and 18 inches high. What is the diagonal length of the suitcase to the *nearest tenth* of a foot?

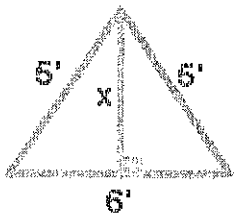
12.



Tanya runs diagonally across a rectangular field that has a length of 40 yards and a width of 30 yards, as shown in the diagram.

What is the length of the diagonal, in yards, that Tanya runs?

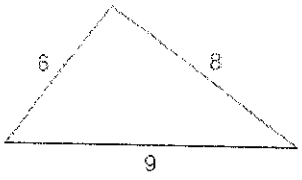
13. Find x.



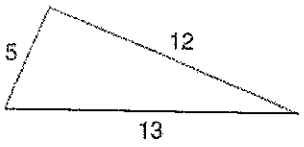
14.

Do the following lengths form a right triangle?

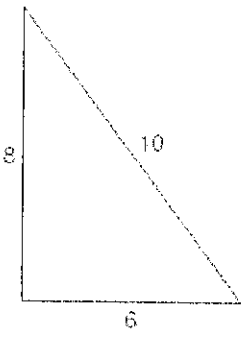
1)



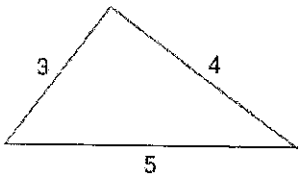
2)



3)

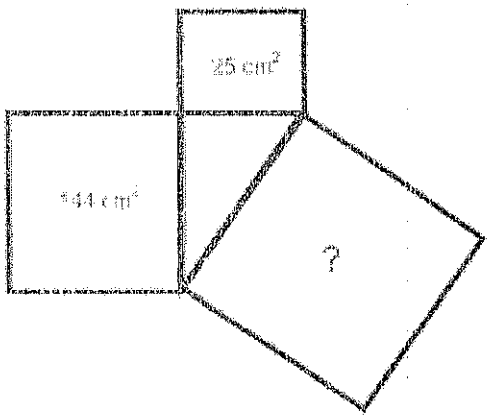


4)



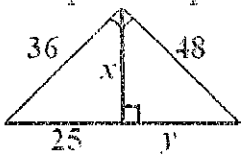
15. The accompanying picture shows 3 squares and 1 triangle.

Find the area of the missing square. SHOW YOUR WORK!!!



16.

Compare the quantity in Column A with the quantity in Column B.



Column A	Column B
x	y

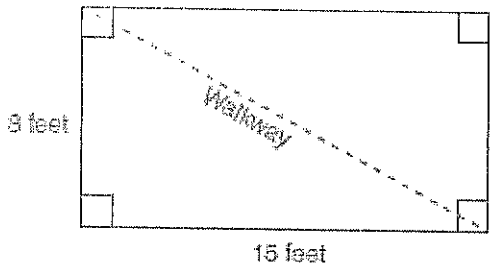
[A] The quantity in Column A is greater.

[B] The quantity in Column B is greater.

[C] The two quantities are equal.

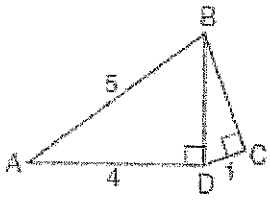
[D] The relationship cannot be determined on the basis of the information supplied.

17. Nancy's rectangular garden is represented in the diagram below.

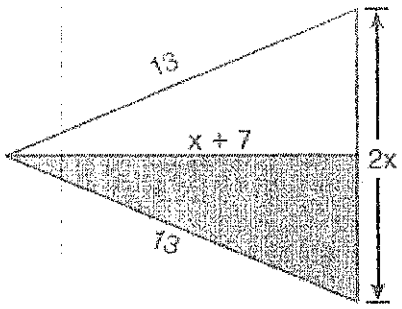


If a diagonal walkway crosses her garden, what is its length, in feet?

18. In the accompanying diagram of right triangles ABD and DBC, $AB = 5$, $AD = 4$, and $CD = 1$. Find the length of $\overline{BC}$, to the *nearest tenth*.



19. The diagram below shows a pennant in the shape of an isosceles triangle. The equal sides each measure 13, the altitude is $x+7$, and the base is $2x$.



What is the length of the base?