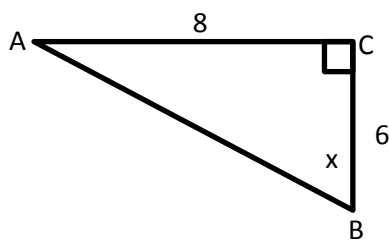


Directions: Solve.

- 1) Write $\sin 30^\circ$ in terms of cosine.
- 2) Write $\cos 45^\circ$ as a trigonometric ratio. (Hint: draw a picture).
- 3) Given a square with a diagonal of 40 m, what is the perimeter of this square?
- 4) Find the perimeter of an equilateral triangle that has an altitude of 10 ft.
- 5) If $\tan A = \frac{5}{8}$, what is the $m\angle A$?
- 6) The leg of a 45° - 45° - 90° triangle measures 9 inches. What is the perimeter of this triangle?
- 7) In $\triangle ABC$, $BC = 10$, $BA = 12$, & $m\angle BCA = 90^\circ$. What is $m\angle A$?
- 8) In a right triangle, $\sin x = \frac{4}{5}$. What is the value of $\cos x$?

Directions: Solve the triangles then use the figure to answer the questions. Round angles to the nearest degree and sides to the nearest tenth.



$\triangle ABC$ is a right triangle. AB is the hypotenuse. Angle B is 70° . $AC = 10$.

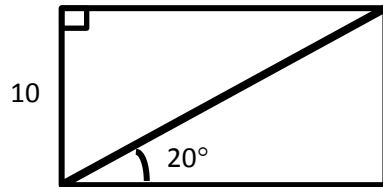
- 9) What is the length of AB ?
- 10) What is the measure of x ?
- 11) What trigonometric ratio represents $\sin x$?
- 12) What is the ratio of $\cos x$?
- 13) What is $m\angle A$?
- 14) What is the length of AB ?
- 15) What is CB ?
- 16) Fill in the blank: $\cos B = \underline{\hspace{1cm}} A$

Directions: Use the scenario to answer questions 17 – 18: *A very adorable kitten is stranded 20 feet high in a tree. A fireman comes to rescue the kitten and wants to place a ladder with an angle of elevation of 53° for ease in climbing it.*

17) What does the length of the ladder need to be (to the nearest whole number) to reach this kitten at this angle of elevation?

18) How far should he place the ladder from the trunk of the tree?

19) What is the length of the diagonal inside the rectangle?



20) What is the second largest angle in a 5-12-13 triangle? Is this triangle acute, right, or obtuse?

21) In a right triangle, $\sin x = \frac{6}{10}$. What is $\tan x$?

22) What is the perimeter of an equilateral triangle with an altitude of $12\sqrt{3}$ units?

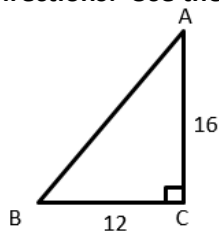
23) A pirate sees a sunken treasure that is 100 feet below the water. The angle of depression from where his boat is to where the treasure is measures 45° . The pirate puts on scuba gear and decides to swim directly to the treasure. How far does he have to swim?

24) Lucy, whose eye level is 4 feet from the ground, stands 10 feet away from the base of a tree. From her line of sight, she is looking at an angle of elevation of 40° to the top of the tree. How tall is the tree?

25) A triangle has vertices of $M(4, 1)$, $A(-1, 1)$, & $P(4, -3)$. What is $m\angle MAP$?

26) What is the area of a square with a diagonal that measures 15 units?

Directions: Use the figure to find each of the following.



27) $\sin A$

29) $m\angle A$

31) $\sin (90 - A)$

28) $\cos A$

30) $m\angle B$

32) $\cos (90 - B)$