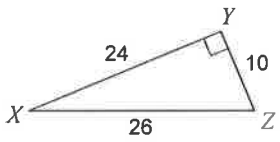
Geometry Name_____ ID: 1

WS 9.4 - Trigonometric Ratios

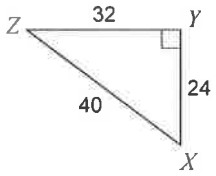
Date_____ Period____

Find the value of each trigonometric ratio.

1) cos Z

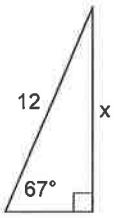


2) tan Z



Find the missing side. Round to the nearest tenth.

3)



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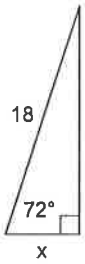

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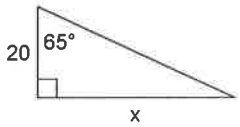

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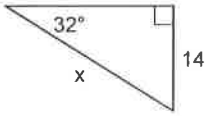

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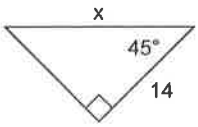

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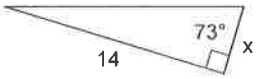

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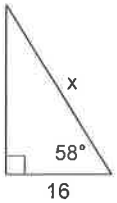

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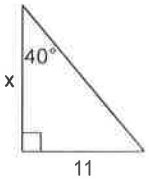

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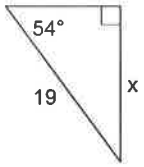

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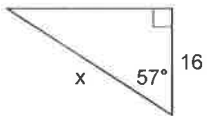
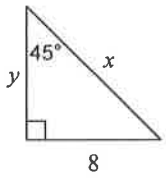


Find the missing side lengths. Leave your answers as radicals in simplest form.

13)



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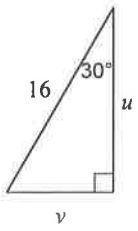

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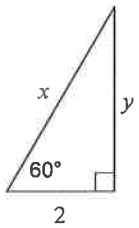

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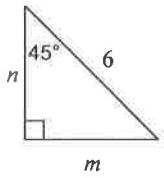


Use a special right triangle to write each trig ratio as a fraction.

17) Cos 60°

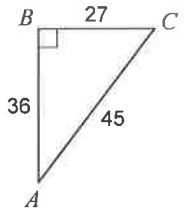
18) Tan 30°

19) Sin 45°

20) Sin 60°

Find the value of each trigonometric ratio.

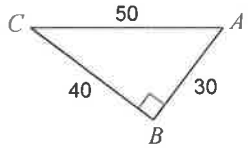
21) sin C



A) $\frac{5}{3}$ B) $\frac{4}{5}$

C) $\frac{3}{4}$ D) $\frac{5}{4}$

22) cos C

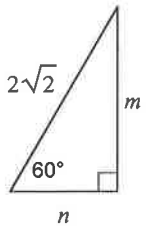


A) $\frac{4}{5}$ B) $\frac{4}{3}$

C) $\frac{5}{4}$ D) $\frac{3}{5}$

Find the perimeter and area of the special right triangle. Leave your answers in simplified radical form.

23)



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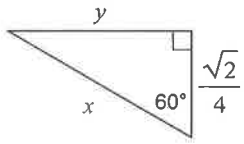

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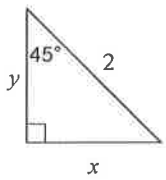

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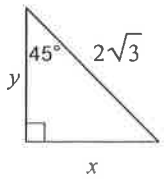


27. **Sports** A jump ramp for waterskiing makes an angle of 15° with the surface of the water. The ramp rises 1.58 m above the surface. What is the length of the ramp to the nearest hundredth of a meter?

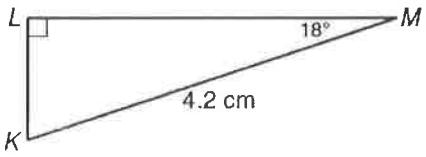
28. **Safety** According to the Occupational Safety and Health Administration (OSHA), a ladder that is placed against a wall should make a 75.5° angle with the ground for optimal safety. To the nearest tenth of a foot, what is the maximum height that a 10-ft ladder can safely reach?

29.

A ramp is used to load a 4-wheeler onto a truck bed that is 3 feet above the ground. The angle that the ramp makes with the ground is 32°. What is the horizontal distance covered by the ramp? Round to the nearest hundredth.

30.

Find the perimeter of the triangle. Round to the nearest hundredth.



31. Joe is trying to find the height of a flagpole. The distance from the ground to his eyes is 6 feet and the distance from Joe to the flagpole is 20 feet. The angle formed from his horizontal line of sight to the top of the flagpole is 56.31°. Find the height of the flagpole.