Geometry Name: _____

Concept 20 Worksheet – due Thursday 2/13 Period: _____

WRITING TRIG RATIOS

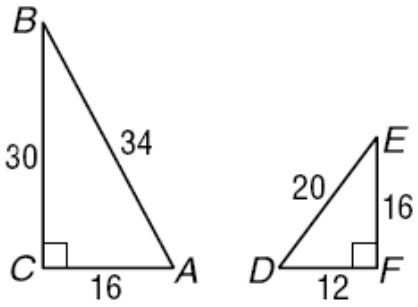
Write the indicated trigonometric ratios as fractions.

1. Sin A = Cos A = Tan A =

2. Sin B = Cos B = Tan B =

3. Sin D = Cos D = Tan D =

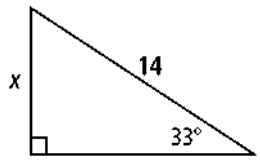
4. Sin E = Cos E = Tan D =



FINDING MISSING SIDE LENGTHS

Write and solve a trigonometric equation to find the value of x for each triangle. Round to the nearest tenth.

5.



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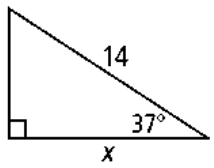

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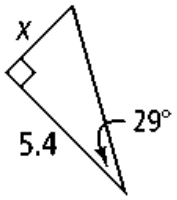

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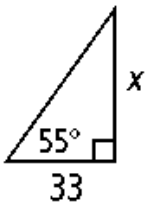

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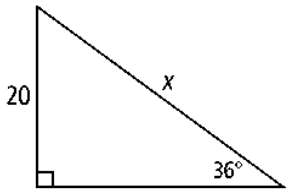

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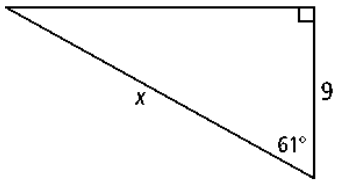
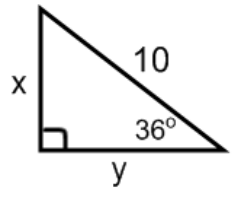


Write and solve two trigonometric equations to find the value of x and y in each triangle. Round answers to the nearest tenth.

11.



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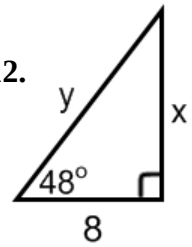

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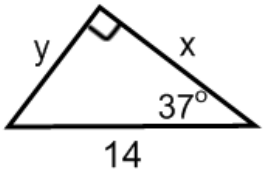
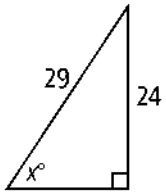


FINDING MISSING ANGLE MEASURES

Find the measure of the angle marked with an x. You will need to use an inverse. Round answers to the nearest tenth.

14.



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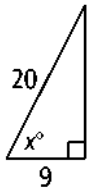

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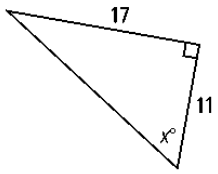

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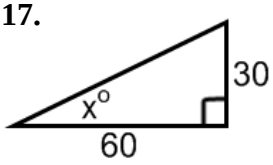

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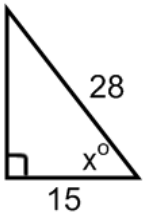

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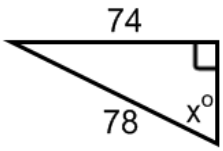
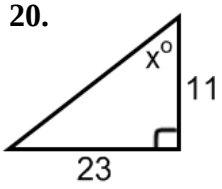


Write and solve a trigonometric equation to find the value of x. Round answers to the nearest tenth. (Sometimes you will use inverses, sometimes you will not.)

20.



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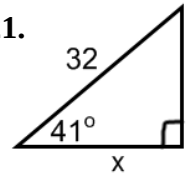

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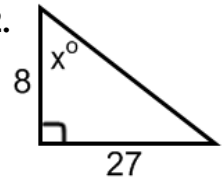

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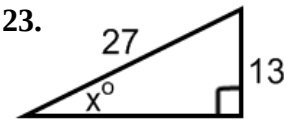

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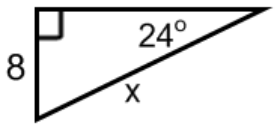

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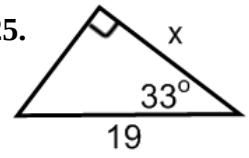

USING ANGLES OF ELEVATION AND ANGLES OF DEPRESSION

Draw and label a diagram for each problem, then answer the question posed. Round your answers to the nearest tenth.

26. From a point on the ground 12 ft from the base of a flag pole, the angle of elevation to the top of the pole measures 53 degrees. How tall is the pole?

27. You are flying a kite with 20 feet of string extended. The angle of elevation from the spool of string to the kite is 41 degrees. About how far off of the ground is your kite?

28. From the top of a vertical cliff that is 40 meters high, the angle of depression to an object level with the base of the cliff is 34 degrees. How far from the base of the cliff is the object?

29. From the top of a 120-foot high tower, an air traffic controller observes an airplane on the runway at an angle of depression of 19 degrees. How far from the base of the tower is the airplane?

30. A person is standing on the runway of an airport 100 feet from the control tower. That person observes an air traffic controller at the window of the 132-foot tower. What is the angle of elevation from the person on the runway to the air traffic controller?