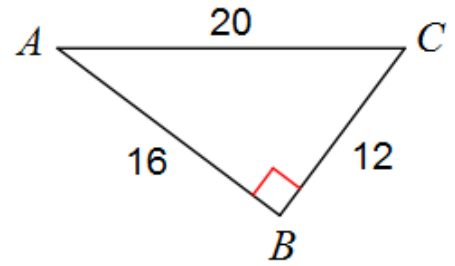**You must show all set up and work for full points.**

For problems 1-6, using the triangle at right, write the trigonometric ratio in simplest form.
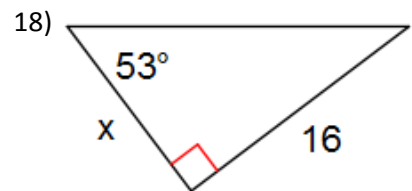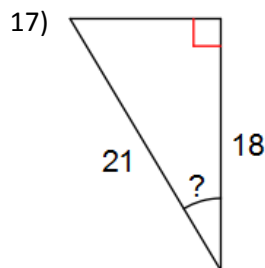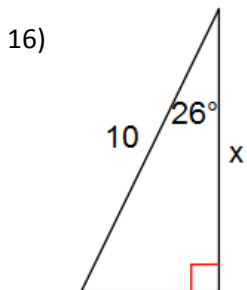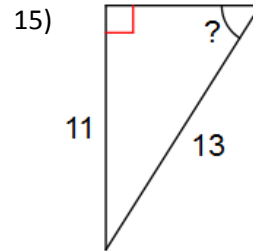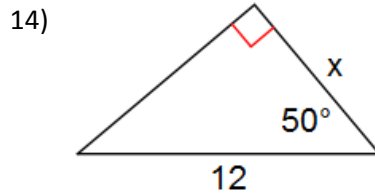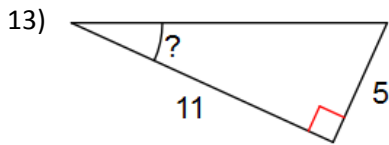
1) sin(A) =

2) cos(A) =

3) tan(A) =

4) sin(C) =

5) cos(C) =

6) tan(C) =

For problems 7-12, complete the following statements.

7) sin(70°) = _____

8) cos(32°) =_____

9) tan(14°) = _____

10) $sin($____°$) = .9744$

11) cos(____°) = .9903

12) tan(____°) = 1.8040

For problems 13-18, use trigonometry to solve for the indicated value.

13)

14)

15)

16)

17)

18)

For problems 19-24, draw a diagram, solve for the indicated value, and write your answer in a complete sentence.

19) A tree casts a 21 m long shadow. The angle of elevation to the sun is 51 degrees. What is the height of the tree?

20) A helicopter is hovering over a landing pad 100 meters from where you are standing. The angle of elevation with the ground is 12 degrees. What is the altitude of the helicopter?

21) You are flying a kite and have let out 80 meters of string. The angle of elevation with the ground is 40 degrees. If the string is stretched straight, how high is the kite above the ground?

22) A 15 meter pole is leaning against a wall. The base of the pole is 10 meters from the wall. Find the measure of the angle the pole makes with the ground.

23) A small airplane climbs at an angle of 18 degrees with the ground. Find the horizontal distance it has flown when it has reached an altitude of 800 meters.

24) The specifications for a laptop computer describe its screen as measuring 15.6 inches. However, this is actually the length of the diagonal of the rectangular screen. If one of the angles of the diagonal is 29 degrees, how wide is the screen horizontally?