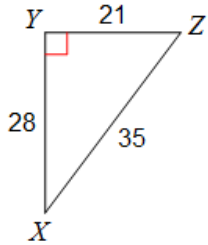**Math 2C Trigonometry Practice Test**   Name: _____
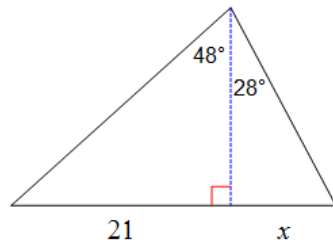
Show your work. Leave fractions and radical in simplest form. Round side lengths to the nearest tenth and angle measurements to the nearest degree.
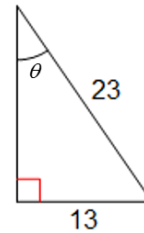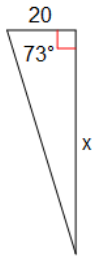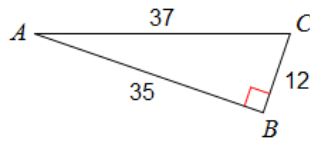
1. State the ratio sin X
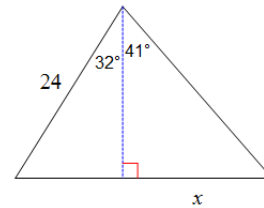
Y ⌐ 21 ─ Z
28 | / 35
X └

2. Solve for x

48°
28°
21   x

3. Solve for θ

θ
23
13

4. Solve for x

20
73°
x

5. State the ratio of tan A

A ── 37 ── C
35   12
     B

6. Solve for x

32° 41°
24
x

7. Solve for x

45° $\sqrt{6}$

x

8. Solve for θ

12
15   θ

9. State the ratio of cos C

C
12   37
B ── 35 ── A

10. Solve for θ

9
θ
37

11. Solve for θ

θ
38
23

12. Solve for x

x
60°
$\dfrac{8\sqrt{3}}{3}$
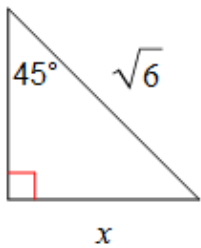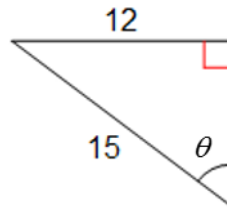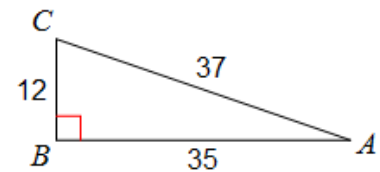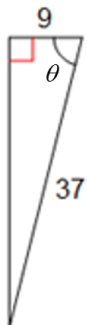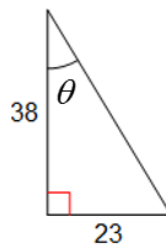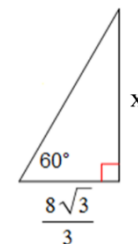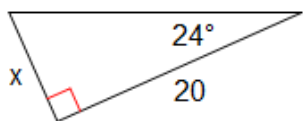
13. Solve for x

14. Solve for θ

15. Find the ratio of cos θ, given
$\tan\theta = \dfrac{15}{8}$, include a sketch

16. Find the complement of
$\cos(90° - C)$

17. Solve for x

18. Find the ratio of sin θ, given
$\cos\theta = \dfrac{7}{25}$, include a sketch

19. Fill in the blank:
$\cos 71° = \underline{\hspace{1cm}}$

20. Solve for x

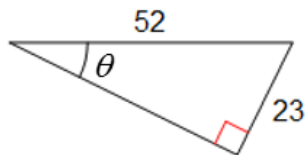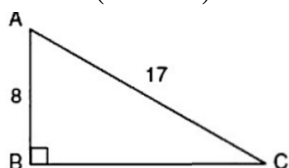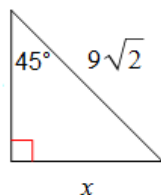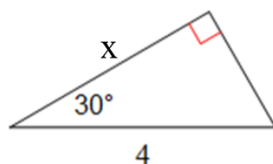21. Mary Lou, whose eyes are five feet off the ground, is standing 50 feet away from the base of a building, and she looks up at a $73°$ angle of elevation to a point on the edge of a building's roof. How tall is the building?

22. You are flying a kite and have let out 80 meters of string. The kite's angle of elevation with the ground is $40°$. If the string is stretched taut, how high is the kite above the ground?

23. A wire anchored to the ground braces a 17 foot pole. The wire is 20 feet long and is attached to the pole 2 feet from the top of the pole. What angle does the wire make with the ground?

24. Eddie, flying a plane over level ground at an altitude of 2,400 feet sights his girlfriend Vivian standing on the street. The angle at which Eddie looks down is $9°$. Find the distance from Eddie to Vivian.

25. The angle of depression from the top of a cliff to an ant on the ground is $35°$. If the ant is 280 feet from the base of the cliff, how tall is the cliff?

Answers

1. $\dfrac{21}{35}$
2. 10.1
3. $34°$
4. 65.4
5. $\dfrac{12}{35}$
6. 17.7
7. $\sqrt{3}$
8. $53°$
9. $\dfrac{12}{37}$
10. $76°$
11. $31°$
12. 8
13. 8.9
14. $26°$
15. $\dfrac{8}{17}$
16. $\dfrac{8}{17}$
17. 9
18. $\dfrac{24}{25}$
19. $\sin 19°$
20. $2\sqrt{3}$
21. 168.5 ft
22. 51 ft
23. $49°$
24. 15,341.8 ft
25. 196.1 ft