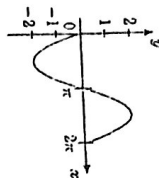


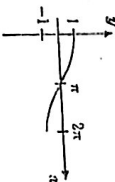
14. Which is an equation of the graph shown?

- A.  $y = \sin 2x$
- B.  $y = -\sin 2x$
- C.  $y = -2 \sin x$
- D.  $y = 2 \sin x$



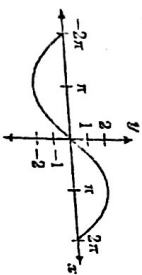
15. Which is an equation of the graph shown below?

- A.  $y = \cos \frac{1}{2}x$
- B.  $y = \cos 2x$
- C.  $y = \sin \frac{1}{2}x$
- D.  $y = \sin 2x$



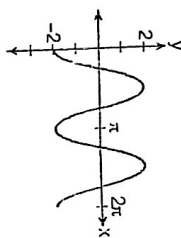
16. Which equation represents the graph below?

- A.  $y = 2 \sin 2x$
- B.  $y = \frac{1}{2} \sin x$
- C.  $y = 2 \sin \frac{1}{2}x$
- D.  $y = 2 \cos 2x$

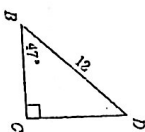


17. Which equation represents the graph below?

- A.  $y = -2 \sin 2x$
- B.  $y = -2 \sin \frac{1}{2}x$
- C.  $y = -2 \cos 2x$
- D.  $y = -2 \cos \frac{1}{2}x$

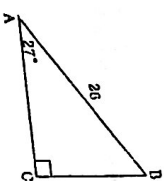


18. In right triangle  $BCD$ ,  $BD = 12$ ,  $m\angle C = 90^\circ$ , and  $m\angle DBC = 47^\circ$ . Find  $DC$  to the nearest tenth.



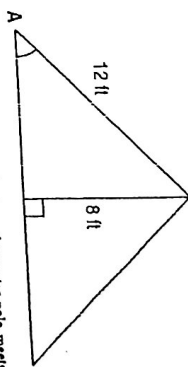
$\sin 47 = \frac{x}{12}$   
 $x = 8.8$

19. In the accompanying diagram of right triangle  $ABC$ , a right angle is at  $C$ ,  $AB = 26$ , and  $m\angle A = 27^\circ$ . Find the length of  $BC$  to the nearest tenth.



$\sin 27 = \frac{x}{26}$   
 $x = 11.6$

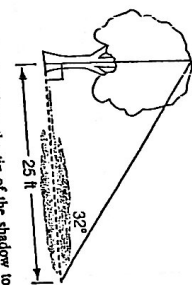
20. The center pole of a tent is 8 feet long, and a side of the tent is 12 feet long as shown in the diagram below.



If a right angle is formed where the center pole meets the ground, what is the measure of angle  $A$  to the nearest degree?

- A. 34
- B. 42
- C. 48
- D. 56

21. A tree casts a 25-foot shadow on a sunny day, as shown in the diagram below.

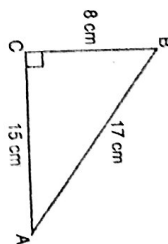


$\tan 32 = \frac{x}{25}$

If the angle of elevation from the tip of the shadow to the top of the tree is  $32^\circ$ , what is the height of the tree to the nearest tenth of a foot?

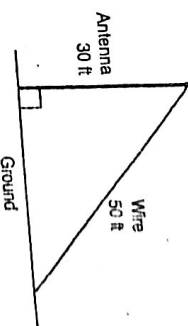
- A. 13.2
- B. 15.6
- C. 21.2
- D. 40.0

22. Which equation shows a correct trigonometric ratio for angle  $A$  in the right triangle below?



- A.  $\sin A = \frac{15}{17}$
- B.  $\tan A = \frac{15}{8}$
- C.  $\cos A = \frac{15}{17}$
- D.  $\tan A = \frac{8}{15}$

23. A communications company is building a 30-foot antenna to carry cell phone transmissions. As shown in the diagram below, a 50-foot wire from the top of the antenna to the ground is used to stabilize the antenna.



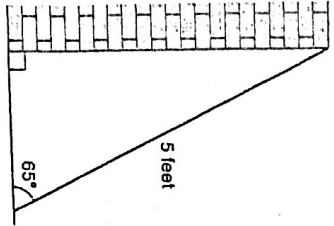
Find, to the nearest degree, the measure of the angle that the wire makes with the ground.

$\sin x = \frac{30}{50}$   
 $x = 37^\circ$

measure of  $\angle B = 90^\circ$ ,  $AC = 50$ , and  $BC = 14$ . Which ratio represents the  $\cos$  of  $\angle A$ ?

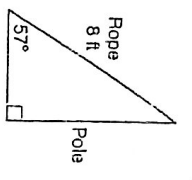
- A.  $\frac{14}{50}$
- B.  $\frac{14}{46}$
- C.  $\frac{46}{50}$
- D.  $\frac{14}{46}$

25. As shown in the diagram below, a ladder 5 feet long leans against a wall and makes an angle of  $65^\circ$  with the ground. Find, to the nearest tenth of a foot, the distance from the wall to the base of the ladder.



$\cos 65 = \frac{x}{5}$   
 2.1

26. An 8-foot rope is tied from the top of a pole to a stake in the ground, as shown in the diagram below.

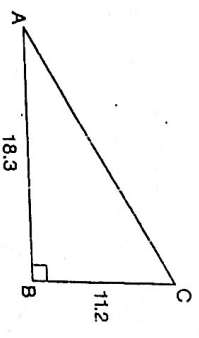


If the rope forms a  $57^\circ$  angle with the ground, what is the height of the pole, to the nearest tenth of a foot?

- A. 4.4
- B. 6.7
- C. 9.5
- D. 12.3

$\sin 57 = \frac{x}{8}$

27. In right triangle  $ABC$  shown below,  $AB = 18.3$  and  $BC = 11.2$ .



What is the measure of  $\angle A$ , to the nearest tenth of a degree?

- A. 31.5
- B. 37.7
- C. 52.3
- D. 58.5

$\tan = \frac{11.2}{18.3}$

28. In  $\triangle ABC$ ,  $m\angle C = 90^\circ$ . If  $AB = 5$  and  $AC = 4$ , which statement is not true?

- A.  $\cos A = \frac{4}{5}$
- B.  $\tan A = \frac{3}{4}$
- C.  $\sin B = \frac{4}{5}$
- D.  $\tan B = \frac{3}{5}$

29. If  $\theta$  is an angle in standard position and its terminal side passes through point  $(-7, \frac{24}{5})$  on the unit circle, then a possible value of  $\theta$  is

- A.  $60^\circ$
- B.  $120^\circ$
- C.  $150^\circ$
- D.  $330^\circ$

30. Express  $\frac{7}{2}$  radians in degree measure.

$135^\circ$

31. Express  $\frac{7}{6}$  radians in degree measure.

$70^\circ$

32. Express  $75^\circ$  in radian measure.

$\frac{5\pi}{12}$

MC

33. Express  $160^\circ$  in radian measure.

$\frac{8\pi}{9}$

# Study special right  $\Delta$ s