Practice Trigonometry Test

Multiple Choice
Identify the choice that best completes the statement or answers the question.

1. Sketch this angle in standard position: $338^\circ$
   
   A. 
   
   B. 
   
   C. 
   
   D. 

2. Point P(4, 7) is on the terminal arm of an angle $\theta$ in standard position. Determine the exact value of $\sin \theta$.
   
   A. \( \frac{4}{\sqrt{65}} \)
   
   B. \( \frac{11}{\sqrt{65}} \)
   
   C. \( \frac{\sqrt{65}}{7} \)
   
   D. \( \frac{7}{\sqrt{65}} \)

3. An angle $\theta$ has its terminal arm in Quadrant 2. Which primary trigonometric ratio is greater than 0?
   
   A. $\tan \theta$
   
   B. $\cos \theta$
   
   C. $\sin \theta$
   
   D. all 3 ratios

4. In which quadrant does the terminal arm of a $59^\circ$ angle in standard position lie?
   
   A. Quadrant 1
   
   B. Quadrant 2
   
   C. Quadrant 3
   
   D. Quadrant 4

5. Determine the reference angle for the angle $26^\circ$ in standard position.
   
   A. $26^\circ$
   
   B. $244^\circ$
   
   C. $64^\circ$
   
   D. $154^\circ$
6. The point (−45, 28) is on the terminal arm of ∠A. Which is the set of exact primary trigonometric ratios for the angle?

A. \( \sin A = \frac{45}{53}, \cos A = \frac{28}{53}, \tan A = \frac{28}{45} \)
B. \( \sin A = \frac{53}{28}, \cos A = \frac{53}{45}, \tan A = \frac{28}{45} \)
C. \( \sin A = \frac{45}{53}, \cos A = \frac{28}{53}, \tan A = \frac{28}{45} \)
D. \( \sin A = \frac{28}{53}, \cos A = \frac{45}{53}, \tan A = \frac{28}{45} \)

7. The point P(2, −4) lies on the terminal arm of an angle \( \theta \) in standard position. Determine the measure of \( \theta \) to the nearest degree.

A. 297°
B. 207°
C. 153°
D. −117°

8. Angle \( \theta \) is in standard position and its terminal arm lies in Quadrant 4. The sine of its reference angle is \( \frac{3}{10} \). Determine the exact value of \( \cos \theta \).

A. \( \frac{3}{\sqrt{91}} \)
B. \( \frac{\sqrt{91}}{10} \)
C. \( \frac{\sqrt{91}}{3} \)
D. \( \frac{10}{\sqrt{91}} \)

9. An angle is in standard position such that \( \cos \theta = \frac{-1}{2} \). What are the possible values of \( \theta \), to the nearest degree, if \( 0^\circ \leq \theta \leq 360^\circ \)?

A. 27° and 153°
B. 30° and 240°
C. 120° and 240°
D. 120° and 300°

10. For \( \triangle DEF \), write the Sine Law equation you would use to determine the measure of \( \angle E \).

A. \( \frac{\sin E}{3.7} = \frac{\sin 75^\circ}{5.4} \)
B. \( \frac{\sin E}{3.7} = \frac{5.4}{\sin 63^\circ} \)
C. \( \frac{\sin E}{3.7} = \frac{\sin 75^\circ}{5.4} \)
D. \( \frac{\sin E}{3.7} = \frac{\sin 63^\circ}{5.4} \)

11. For \( \triangle ABC \), determine the measure of \( \angle A \) to the nearest degree.

A. 141°
B. 48°
C. 72°
D. 120°
12. In \( \triangle ABC \), \( AB = 4 \) cm, \( BC = 7 \) cm, and \( AC = 6.1 \) cm. Determine the measure of \( \angle B \) to the nearest degree.

A. 86°
B. 23°
C. 7°
D. 60°

13. For \( \triangle PQR \), determine the length of QR to the nearest tenth of a centimetre.

A. 4.4 cm
B. 15.7 cm
C. 3.6 cm
D. 6.8 cm

14. In \( \triangle PMN \), determine the length of PN to the nearest tenth of a centimetre.

A. 13.7 cm
B. 5.9 cm
C. 8.5 cm
D. 34.3 cm

15. Two fire towers are 30 km apart. A fire is spotted from the distant West tower at 18° N of E while the same fire is spotted from the East tower at 41° N of W. How much closer is the East Tower to the fire than the West tower?

A. 12.1 km
B. 9.7 km
C. 10.8 km
D. 12.7 km

Numeric Response

1. Given \( \angle C = 45 \), \( b = 6 \), \( c = 5 \) in \( \triangle ABC \), calculate the **smallest** possible measurement of \( \angle A \) to the nearest degree.
Practice Trigonometry Test
Answer Section

MULTIPLE CHOICE

1. A
2. D
3. C
4. A
5. A
6. D
7. A
8. B
9. C
10. A
11. C
12. D
13. D
14. B
15. A

NUMERIC RESPONSE

1. 13