**LESSON 10-2**

# Practice C

### *Angles of Rotation*

**Find the measures of a positive angle and a negative angle that are coterminal with each given angle.**

1. $\theta = 400°$

2. $\theta = -360°$

3. $\theta = -1010°$

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4. $\theta = 567°$

5. $\theta = -164°$

6. $\theta = 358°$

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**Find the measure of the reference angle for each given angle.**

7. $\theta = 504°$

8. $\theta = -388°$

9. $\theta = 991°$

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10. $\theta = 486°$

11. $\theta = -920°$

12. $\theta = -1787°$

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**P is a point on the terminal side of $\theta$ in standard position. Find the exact value of the six trigonometric functions for $\theta$.**

13. $P(-1, 14)$

14. $P(-8, -8)$

15. $P(9, -6)$

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16. $P(10, 15)$

17. $P(-2, -1)$

18. $P(-12, 5)$

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**Solve.**

19. A restaurant in the round rotates clockwise so diners can view the city. Fifty evenly-spaced window tables are numbered clockwise from 1 to 50. A waiter noted where Table 1 was at the beginning of his shift. At the end of his shift, the restaurant had made 4 complete rotations and Table 1 was then where Table 22 had been. Through how many degrees had the restaurant rotated during his shift?

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$\csc \theta = \dfrac{\sqrt{85}}{9}; \sec \theta = \dfrac{\sqrt{85}}{2}$

18. $\sin \theta = -\dfrac{5\sqrt{74}}{74}; \cos \theta = -\dfrac{7\sqrt{74}}{74}$

   $\tan \theta = \dfrac{5}{7}; \cot \theta = \dfrac{7}{5};$

   $\csc \theta = -\dfrac{\sqrt{74}}{5}; \sec \theta = -\dfrac{\sqrt{74}}{7}$

19. 8100°

**Practice C**

1. 40°, −320°    2. 360°, −720°

3. 70°, −290°    4. 207°, −153°

5. 196°, −524°   6. 718°, −2°

7. 36°           8. 28°

9. 91°           10. 54°

11. 20°          12. 13°

13. $\sin \theta = \dfrac{14\sqrt{197}}{197}; \cos \theta = -\dfrac{\sqrt{197}}{197};$

   $\tan \theta = -14; \cot \theta = -\dfrac{1}{14};$

   $\csc \theta = \dfrac{\sqrt{197}}{14}; \sec \theta = -\sqrt{197}$

14. $\sin \theta = -\dfrac{\sqrt{2}}{2}; \cos \theta = -\dfrac{\sqrt{2}}{2};$

   $\tan \theta = 1; \cot \theta = 1;$

   $\csc \theta = -\sqrt{2}; \sec \theta = -\sqrt{2}$

15. $\sin \theta = -\dfrac{2\sqrt{13}}{13}; \cos \theta = \dfrac{3\sqrt{13}}{13};$

   $\tan \theta = -\dfrac{2}{3}; \cot \theta = -\dfrac{3}{2};$

   $\csc \theta = -\dfrac{\sqrt{13}}{2}; \sec \theta = \dfrac{\sqrt{13}}{3}$

16. $\sin \theta = \dfrac{3\sqrt{13}}{13}; \cos \theta = \dfrac{2\sqrt{13}}{13};$

   $\tan \theta = \dfrac{3}{2}; \cot \theta = \dfrac{2}{3};$

   $\csc \theta = \dfrac{\sqrt{13}}{3}; \sec \theta = \dfrac{\sqrt{13}}{2}$

17. $\sin \theta = -\dfrac{\sqrt{5}}{5}; \cos \theta = -\dfrac{2\sqrt{5}}{5};$

   $\tan \theta = \dfrac{1}{2}; \cot \theta = 2;$

   $\csc \theta = -\sqrt{5}; \sec \theta = -\dfrac{\sqrt{5}}{2}$

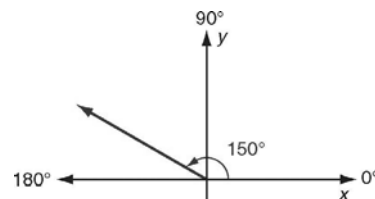18. $\sin \theta = \dfrac{5}{13}; \cos \theta = -\dfrac{12}{13};$

   $\tan \theta = -\dfrac{5}{12}; \cot \theta = -\dfrac{12}{5};$

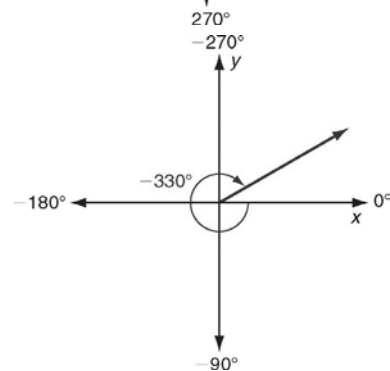   $\csc \theta = \dfrac{13}{5}; \sec \theta = -\dfrac{13}{12}$

19. 1598.4°

**Reteach**

1.



2.



3. 505°           −215°

4. 230°           −490°

5. 570°           −150°

6. 60°                    7. 45°

8. 70°

**Challenge**

1. About 1.52          2. 1.0

3. $1.97 \times 10^8$ m per s    4. 2.42

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