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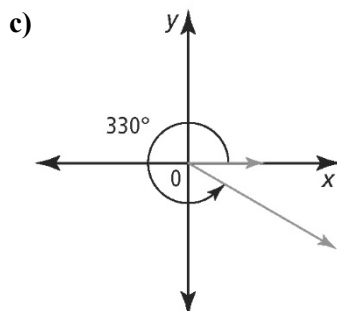
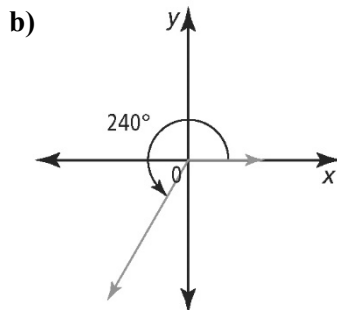
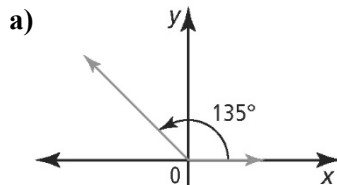
Unit 6 Extra Practice

1. Sketch angles in standard position so that the terminal arm passes through each point.

- a) (1, 5)
- b) (4, -3)
- c) (-5, 12)
- d) (2, 0)

2. Determine the exact values of the sine, cosine, and tangent ratios for each angle in #1.

3. Determine the exact values of the sine, cosine, and tangent ratios for each angle.



4. Without using a calculator, state whether each ratio is positive or negative.

- a) $\sin 100^\circ$
- b) $\cos 200^\circ$
- c) $\tan 300^\circ$
- d) $\sin 350^\circ$

5. An angle is in standard position with its terminal arm in the stated quadrant. Determine the exact values for the other two primary trigonometric ratios for each.

a) $\sin \theta = \frac{-3}{5}$; quadrant III

b) $\cos \theta = \frac{2}{3}$; quadrant IV

c) $\tan \theta = \frac{-5}{12}$; quadrant II

6. Solve each equation, for $0^\circ \leq \theta < 360^\circ$. Use a diagram involving a special right triangle.

a) $\sin \theta = \frac{-1}{\sqrt{2}}$

b) $\tan \theta = \frac{1}{\sqrt{3}}$

c) $\cos \theta = \frac{\sqrt{3}}{2}$

d) $\sin \theta = -1$

7. Solve each equation, for $0^\circ \leq \theta < 360^\circ$.

a) $\sin \theta = 0.7760$

b) $\cos \theta = -0.8090$

c) $\tan \theta = -0.9004$

d) $\sin \theta = -0.9848$

8. Is each statement true or false? Justify your answer.

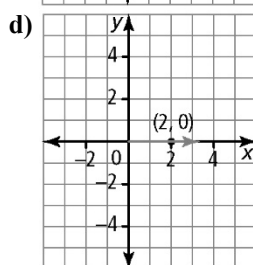
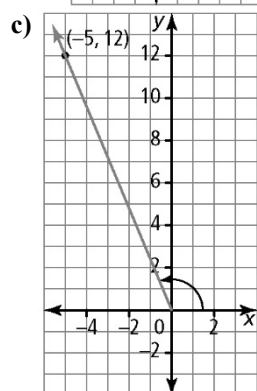
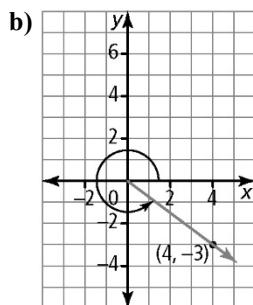
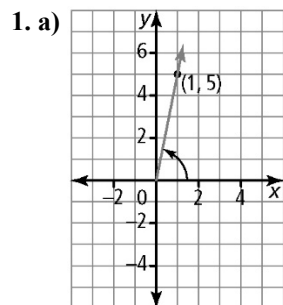
a) $\sin 120^\circ = \cos 210^\circ$

b) $\cos 170^\circ = \cos 350^\circ$

c) $\sin 200^\circ = \sin 340^\circ$

d) $\cos 300^\circ = \sin 150^\circ$

KEY



2. a) $\sin \theta = \frac{5}{\sqrt{26}}$; $\cos \theta = \frac{1}{\sqrt{26}}$; $\tan \theta = 5$

b) $\sin \theta = \frac{-3}{5}$; $\cos \theta = \frac{4}{5}$; $\tan \theta = \frac{-3}{4}$

c) $\sin \theta = \frac{12}{13}$; $\cos \theta = \frac{-5}{13}$; $\tan \theta = \frac{12}{-5}$

d) $\sin \theta = 0$; $\cos \theta = 1$; $\tan \theta = 0$

3. a) $\sin \theta = \frac{1}{\sqrt{2}}$; $\cos \theta = \frac{-1}{\sqrt{2}}$; $\tan \theta = -1$

b) $\sin \theta = \frac{-\sqrt{3}}{2}$; $\cos \theta = \frac{-1}{2}$; $\tan \theta = \sqrt{3}$

c) $\sin \theta = \frac{-1}{2}$; $\cos \theta = \frac{\sqrt{3}}{2}$; $\tan \theta = \frac{-1}{\sqrt{3}}$

4. a) positive b) negative c) negative d) negative

5. a) $\cos \theta = \frac{-4}{5}$; $\tan \theta = \frac{3}{4}$

b) $\sin \theta = \frac{-\sqrt{5}}{3}$; $\tan \theta = \frac{-\sqrt{5}}{2}$

c) $\sin \theta = \frac{5}{13}$; $\cos \theta = \frac{-12}{13}$

6. a) 225° , 315° b) 30° , 210° c) 30° , 330° d) 270°

7. a) 51° , 129° b) 144° , 216° c) 138° , 318°

d) 260° , 280°

8. a) False. $\sin 120^\circ$ is in quadrant II so it is positive, and $\cos 210^\circ$ is in quadrant III so it is negative.

b) False. $\cos 170^\circ$ is in quadrant II so it is negative, and $\cos 350^\circ$ is in quadrant IV so it is positive.

c) True. The reference angle for both $\sin 200^\circ$ and $\sin 340^\circ$ is 20° . Both are negative.

d) True. The reference angles are not equal, but both ratios, $\cos 300^\circ$ and $\sin 150^\circ$ are equal to 0.5. Both are positive since the cosine ratio is positive in quadrant IV and the sine ratio is positive in quadrant II.