

13.3 Sine and Cosine Functions

Name Key Block _____
Date _____

For each of the following, find the least positive angle measurement that is coterminal.

1. -74° (286°)

2. $7\frac{2}{5}\pi$ $\frac{37\pi}{5} - \frac{30\pi}{5} = \frac{7\pi}{5}$

3. $\frac{43}{5}\pi = \frac{40\pi}{5} + \frac{3\pi}{5}$ $(-\frac{5\pi}{6} + \frac{12\pi}{6} = \frac{7\pi}{6})$

4. $+720 - 590^\circ$ (130°)

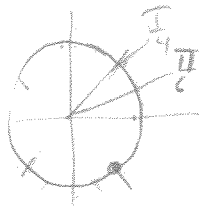
5. $-2\frac{5}{6}\pi = -\frac{17\pi}{6} + 2(\frac{12\pi}{6}) = \frac{7\pi}{6}$

6. $920^\circ - 720^\circ = 200^\circ$

7. $1100^\circ - 3(360) = 20^\circ$

8. $-\frac{19}{10}\pi + \frac{20\pi}{10} = \frac{\pi}{10}$

9. $\frac{85\pi}{6} - \frac{(12\pi)}{6} \cdot 7 = \frac{\pi}{6}$



10. $1426^\circ - 3(360) = 346^\circ$

Find each value
11. $\cos \frac{7\pi}{4}$ $(\frac{\sqrt{2}}{2})$

12. $\sin -30^\circ$ $(-\frac{1}{2})$

13. $\sin(-\frac{2}{3}\pi)$ $(-\frac{\sqrt{3}}{2})$

14. $\cos(-330^\circ)$ $(\frac{\sqrt{3}}{2})$

15. $\cos 600^\circ$ $(-\frac{1}{2})$
 $\frac{54}{-360} = \frac{240}{240}$

16. $\sin \frac{9}{2}\pi$ (1)

17. $\cos 187\pi$ (-1)

18. $\cos(-\frac{11}{4}\pi)$ $(-\frac{\sqrt{2}}{2})$

19. $\sin(-225^\circ)$ $(\frac{\sqrt{2}}{2})$
 $\frac{180}{45}$

20. $\sin 870^\circ$ $(\frac{1}{2})$
 $-\frac{720}{150}$

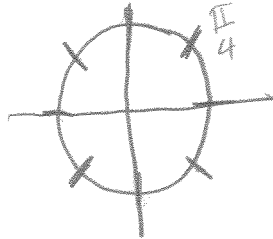
13.3 Sine and Cosine Functions HOMEWORK

Name KEM
 Date _____ Block _____

Find each value.

1. $\sin 45^\circ$

$\frac{\sqrt{2}}{2}$

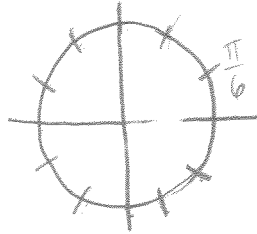


3. $\cos \frac{11\pi}{3}$

$\frac{1}{2}$

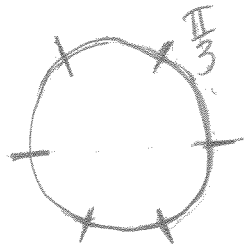
5. $\sin \frac{3\pi}{2}$

-1



7. $\sin (-180^\circ)$

0



9. $\cos -60^\circ$

$\frac{1}{2}$

11. $\sin -\frac{\pi}{6}$

$-\frac{1}{2}$

2. $\cos 150^\circ$

$-\frac{\sqrt{3}}{2}$

4. $\sin -\frac{5\pi}{3}$

$\frac{\sqrt{3}}{2}$

6. $\cos \frac{7\pi}{4}$

$\frac{\sqrt{2}}{2}$

8. $\cos -\frac{7\pi}{4}$

$\frac{\sqrt{2}}{2}$

10. $\sin 300^\circ$

$-\frac{\sqrt{3}}{2}$

12. $\sin \frac{4\pi}{3}$

$-\frac{\sqrt{3}}{2}$

13. $4(\sin 30^\circ)(\cos 60^\circ)$

$4\left(\frac{1}{2}\right)\left(\frac{1}{2}\right) = 1$

14. $\frac{\sin 30^\circ + \cos 60^\circ}{2}$

$\frac{\frac{1}{2} + \frac{1}{2}}{2} = \frac{1}{2}$

15. $\frac{4\sin 300^\circ + 2\cos 30^\circ}{3}$

$\frac{4\left(-\frac{\sqrt{3}}{2}\right) + 2\left(\frac{\sqrt{3}}{2}\right)}{3} \Rightarrow \frac{-4\sqrt{3} + 2\sqrt{3}}{3}$

16. $\sin 30^\circ + \sin 60^\circ$

$\frac{1}{2} + \frac{\sqrt{3}}{2} = \frac{1+\sqrt{3}}{2}$

17. $(\sin 60^\circ)^2 + (\cos 60^\circ)^2$

$\left(\frac{\sqrt{3}}{2}\right)^2 + \left(\frac{1}{2}\right)^2 = \frac{3}{4} + \frac{1}{4} = \frac{4}{4} = 1$

$\frac{3}{3} \Rightarrow \frac{-2\sqrt{3} + \sqrt{3}}{3} = \frac{-\sqrt{3}}{3}$

18. $8(\sin 120^\circ)(\cos 120^\circ)$

$8\left(\frac{\sqrt{3}}{2}\right)\left(-\frac{1}{2}\right) = \frac{-8\sqrt{3}}{4} = -2\sqrt{3}$