

## Starter

Get out your 6.3 packet, we will go over any questions you have soon!

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8.

$\sin \theta = \frac{-\sqrt{2}}{2}$   
 $\sin \theta = -\frac{\sqrt{2}}{2}$   
 $\left(-\frac{\sqrt{2}}{2}, -\frac{\sqrt{2}}{2}\right)$   
 $r = \sqrt{\left(-\frac{\sqrt{2}}{2}\right)^2 + \left(-\frac{\sqrt{2}}{2}\right)^2}$   
 $r = \sqrt{\frac{2}{4} + \frac{2}{4}} = \sqrt{1} = 1$

9. In each graph above, the angle of rotation is indicated by an arc and  $\theta$ . Describe the angles of rotation that make the y-values of the points be positive and the angles of rotation that make the y-values be negative.

8.50 x 11.00 in

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14. The shadow of a flagpole is 40.6 meters long when the angle of elevation of the sun is  $34.6^\circ$ . Find the height of the flagpole.

15. The angle of depression from the top of a building to a car parked in the parking lot is  $32.5^\circ$ . How far from the top of the building is the car on the ground, if the building is 252 meters high?

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$$252 \cdot \tan 57.5 = \frac{X}{252} \cdot 252$$

$$252 \tan 57.5 = X$$

$$395.50 \text{ m} = X$$

## Schedule

-Go over 6.3

-SAGE Review

The image shows a screenshot of a web browser displaying a unit circle. The unit circle is centered at the origin of a Cartesian coordinate system with x and y axes. The circle has a radius of 1. Key points on the circle are labeled with their coordinates: (1, 0) at 0°, (0, 1) at 90°, (-1, 0) at 180°, and (0, -1) at 270°. Other points are labeled with their corresponding angles in degrees and radians, and their coordinates are written in blue and red ink. For example, at 30° (π/6), the coordinates are (√3/2, 1/2). At 45° (π/4), the coordinates are (√2/2, √2/2). At 60° (π/3), the coordinates are (1/2, √3/2). At 120°, the coordinates are (-1/2, √3/2). At 135°, the coordinates are (-√2/2, √2/2). At 150°, the coordinates are (-√3/2, 1/2). At 210°, the coordinates are (-√3/2, -1/2). At 225°, the coordinates are (-√2/2, -√2/2). At 240°, the coordinates are (-1/2, -√3/2). At 300°, the coordinates are (1/2, -√3/2). At 315°, the coordinates are (√2/2, -√2/2). At 330°, the coordinates are (√3/2, -1/2). Handwritten notes in blue and red ink provide the cosine and sine values for π/6 and 30°. The cosine values are 0.866 and the sine values are 0.5. The browser's address bar shows the URL: https://en.wikipedia.org/wiki/Unit\_circle#/media/File:Unit\_circle\_angles\_color.svg. The browser's title bar says "Unit circle angles color - U x". The browser's tabs show "Apps", "HTVS News Live Str...", "ESL Class", and "https://aesoponline...". The browser's status bar shows "Bookmark this page". The browser's footer shows "The unit circle, showing coordinates of certain points" and a "More details" button. The browser's footer also shows "Jim.belk - Own work" and "CC BY-SA 3.0".

$(\cos \theta, \sin \theta)$

$\cos \frac{\pi}{6} = 0.866$   
 $\sin \frac{\pi}{6} = 0.5$   
 $\cos 30^\circ = 0.866$   
 $\sin 30^\circ = 0.5$

The unit circle, showing coordinates of certain points

More details

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The unit circle, showing coordinates of certain points

More details

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$$\frac{82 \text{ m}}{1} \cdot \frac{1 \text{ ft}}{12 \text{ in}}$$

## Converting Between Degrees & Radians

Deg → Rad

$$\frac{220^\circ}{1} \cdot \frac{\pi}{180^\circ} = \frac{220\pi}{180} = \frac{11\pi}{9} \text{ or } 3.84 \text{ radians}$$

Rad → Deg

$$\frac{7\pi}{5} \cdot \frac{180^\circ}{\pi} = \frac{7(180)}{5} = 252^\circ$$