

4.1 Notes

Friday, October 24, 2014
10:05 AM



Precalculus

4.1 Radians & Bearings

Name _____

Radians - 1 radian $\approx 57.3^\circ$
 π radians = 180°
 2π radians = 360°
 Radians are unitless

Convert
 Radians \rightarrow Degrees $\left(\frac{180^\circ}{\pi}\right)$
 Degrees \rightarrow Radians $\left(\frac{\pi}{180^\circ}\right)$

1. Convert 120° to radians.

$$120^\circ \left(\frac{\pi}{180^\circ}\right) = \frac{120\pi}{180} = \frac{2\pi}{3}$$

2. Convert 214° to radians.

$$214^\circ \left(\frac{\pi}{180^\circ}\right) = \frac{107\pi}{90} \approx 3.74 \text{ radian}$$

3. Convert $\frac{\pi}{9}$ to degrees.

$$\frac{\pi}{9} \left(\frac{180^\circ}{\pi}\right) = 20^\circ$$

5 Convert 4 radians to degrees.
 $4 \left(\frac{180^\circ}{\pi}\right) \approx 229.2^\circ$

4. Convert $\frac{11\pi}{20}$ to degrees.

$$\frac{11\pi}{20} \left(\frac{180^\circ}{\pi}\right) = 11(9) = 99^\circ$$

Bearings - used for navigation
 Measured from North, clockwise

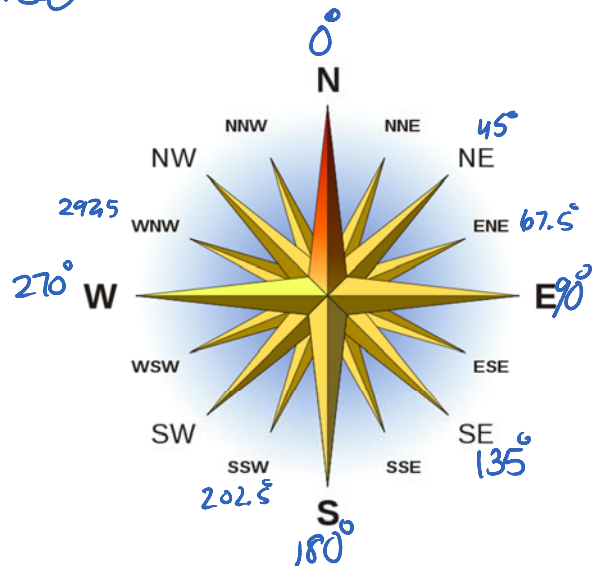


1. What is the angle that describes the compass bearing?

a) East-northeast 67.5°
 ENE

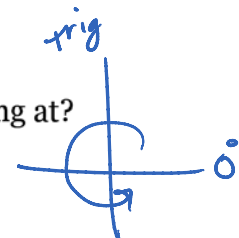
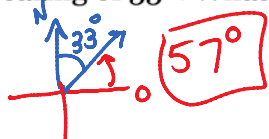
b) Southeast 135°
 SE

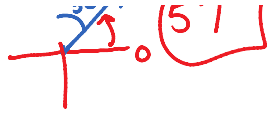
c) West-northwest 292.5°
 WNW



2. What compass direction is closest to a bearing of 200° ? SSW 202.5°

3. A plane flies at a bearing of 33° . What "trig" angle measure is the plane flying at?





4. A ship sails at a bearing of 210° . What "trig" angle measure is the ship sailing at?

