Bellwork Alg 2 Friday, March 27, 2020

1. The value of a home has been decreasing 2.4% each year. In 2015 the home was worth $160,000.

a) Find the value of the home in 2011 to the nearest penny (hundredth).

b) Find the number of years it will take for the home to reach $100,000. Round to the nearest hundredth.

2. Convert each angle from degrees to radians or radians to degrees. Round degree answers to the nearest hundredth. Give radian answers in terms of π and as a fraction in simplified form.

a) $\theta = 225°$

b) $\theta = \frac{11\pi}{8}$

Bellwork Alg 2 Friday, March 27, 2020 ANSWERS

1. The value of a home has been decreasing 2.4% each year. In 2015 the home was worth $160,000.

a) Find the value of the home in 2011 to the nearest penny (hundredth).

EQ: $y = 160{,}000\,(0.976)^x$ x = # yrs since 2015

THE BASE $100 - 2.4 = 97.6\%$ $b = 0.976$

$y = 160000(0.976)^{-4}$ for 2011 $x = -4$

$= \$176{,}327.77$

b) Find the number of years it will take for the home to reach $100,000. Round to the nearest hundredth.

$\frac{100000}{160000} = \frac{160000\,(0.976)^x}{160000}$

$0.625 = 0.976^x$

$\log_{0.976}(0.625) = x$

$x = 19.35$ yrs

2. Convert each angle from degrees to radians or radians to degrees. Round degree answers to the nearest hundredth. Give radian answers in terms of π and as a fraction in simplified form.

a) $\theta = 225°$

$225° \cdot \frac{\pi}{180°}$ (÷45 / ÷45)

$= \frac{5\pi}{4}$

b) $\theta = \frac{11\pi}{8}$

$\frac{11\pi}{8} \cdot \frac{180°}{\pi}$

$= 247.5°$