Bellwork Alg 2 Thursday, March 28, 2019

State in which quadrant or on which axis the terminal side of each angle lies.

1. $\frac{143\pi}{7}$ 2. $\frac{312\pi}{23}$ 3. 4770° 4. $\frac{352\pi}{9}$

5. 2623° 6. $\frac{113\pi}{2}$ 7. $\frac{194\pi}{2}$

8. A company that makes wildlife videos purchases camera equipment for $32,400. The equipment depreciates in value at a constant rate for 12 years, after which it is considered to have no monetary value. How much is the camera equipment worth 4 years after it is purchased?

A) $10,800 B) $16,200 C) $21,600 D) $29,700

9. The expression $\frac{x^{-2}y^{\frac{1}{2}}}{x^{\frac{1}{3}}y^{-1}}$, where $x > 1$ and $y > 1$, is equivalent to which of the following?

A) $\frac{\sqrt{y}}{\sqrt[3]{x^2}}$ B) $\frac{y\sqrt{y}}{\sqrt[3]{x^2}}$ C) $\frac{y\sqrt{y}}{x\sqrt{x}}$ D) $\frac{y\sqrt{y}}{x^2\sqrt[3]{x}}$

10. The expression $\frac{1}{3}x^2 - 2$ can be written as $\frac{1}{3}(x-k)(x+k)$, where k is a positive constant. What is the value of k?

A) 2 B) 6 C) $\sqrt{2}$ D) $\sqrt{6}$

Bellwork Alg 2 Thursday, March 28, 2019

ANSWERS

State in which quadrant or on which axis the terminal side of each angle lies.

1. $\frac{143\pi}{7}$

COTERMINAL WITH $\frac{3\pi}{7}$ — I

2. $\frac{312\pi}{23}$

COTERMINAL WITH $\frac{36\pi}{23}$ — IV

3. $4770°$

COTERMINAL WITH $90°$ — pos y-axis

4. $\frac{352\pi}{9}$ COTERMINAL WITH $\frac{10\pi}{9}$ — III

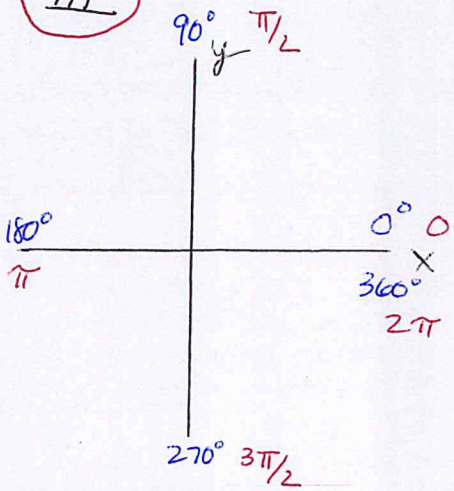
5. $2623°$

COTERMINAL WITH $103°$ — II

6. $\frac{113\pi}{2}$

COTERMINAL WITH $\frac{\pi}{2}$ — pos y-axis

7. $\frac{194\pi}{2} = 97\pi$ — NEG x-axis



8. A company that makes wildlife videos purchases camera equipment for $32,400. The equipment depreciates in value at a constant rate for 12 years, after which it is considered to have no monetary value. How much is the camera equipment worth 4 years after it is purchased?

A) $10,800 B) $16,200 C) $21,600 D) $29,700

x = amount of yearly depreciation

$32,400 - 12x = 0$

$32,400 = 12x$

$x = \$2700$

value after 4 years

$32,400 - 4(2700)$

$= 21,600$

9. The expression $\frac{x^{-2}y^{\frac{1}{2}}}{x^{\frac{1}{3}}y^{-1}}$, where $x > 1$ and $y \geq 1$, is equivalent to which of the following?

A) $\frac{\sqrt{y}}{\sqrt[3]{x^2}}$ B) $\frac{y\sqrt{y}}{\sqrt[3]{x^2}}$ C) $\frac{y\sqrt{y}}{x\sqrt{x}}$ D) $\frac{y\sqrt{y}}{x^2\sqrt[3]{x}}$

$\frac{x^{-2}y^{\frac{1}{2}}}{x^{1/3}y^{-1}} = \frac{y \cdot y^{1/2}}{x^2 \cdot x^{1/3}}$

$= \frac{y\sqrt{y}}{x^2\sqrt[3]{x}}$

10. The expression $\frac{1}{3}x^2 - 2$ can be written as $\frac{1}{3}(x-k)(x+k)$, where k is a positive constant. What is the value of k?

A) 2 B) 6 C) $\sqrt{2}$ D) $\sqrt{6}$

$\frac{1}{3}(x-k)(x+k)$

$= \frac{1}{3}(x^2 - k^2)$

$\frac{1}{3}x^2 - 2 = \frac{1}{3}x^2 - \frac{1}{3}k^2$

$(-3)(-2) = (-\frac{1}{3}k^2)(-3) \rightarrow k^2 = 6$

$k = \pm\sqrt{6}$