Math III Semester 2 Review #2 Name_____

Solve each equation.

1) $216^{3p+3} \cdot 36^{2-p} = 36^{2p}$

2) $16^{2n+2} \cdot 4^{2-n} = 1$

3) $9^{-7k} - 4 = 52$

4) $3^{7x} - 6.6 = 13$

Solve each equation. Check for extraneous solutions.

5) $\log_4 x + \log_4 (x + 30) = 3$

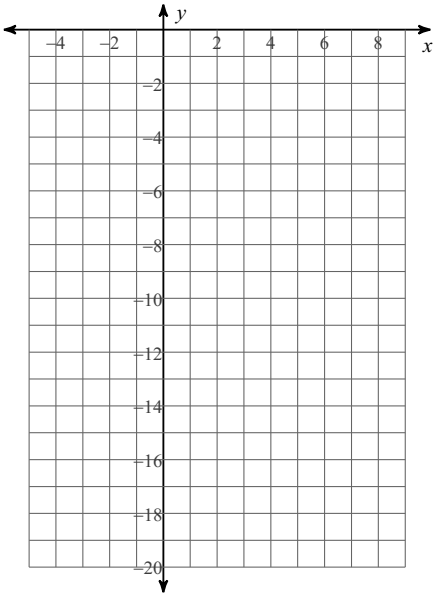
6) $\ln 8 + \ln -5x = 4$

7) $\log -r = \log (-2r - 5)$

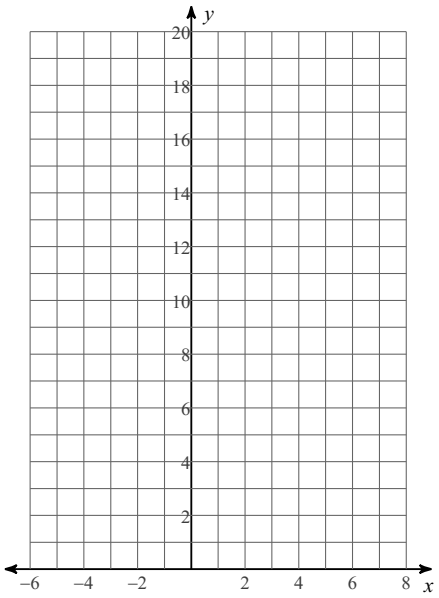
8) $\log_5 (4x - 8) = \log_5 3x$

Graph of each function. State the domain, range, intercepts, asymptote, and end behavior.

9) $y = -4 \cdot 2^{x-2} - 1$

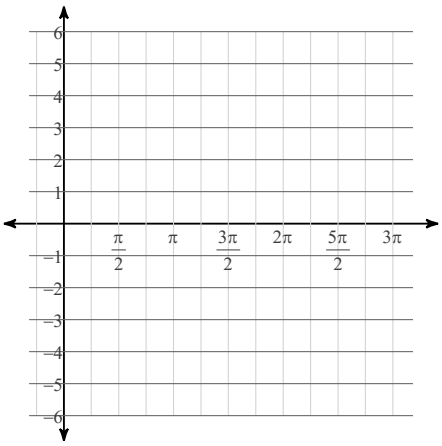


10) $y = 2 \cdot \left(\frac{1}{2}\right)^{x-1} + 1$

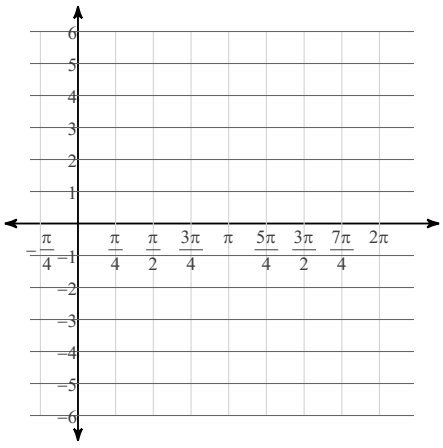


Graph each function. State the domain, range, period, midline, and amplitude.

11) $y = 2\cos\left(\theta + \frac{5\pi}{6}\right)$



12) $y = \frac{1}{2} \cdot \tan\left(\theta + \frac{3\pi}{4}\right)$



Use the given point on the terminal side of angle θ to find the value of the trigonometric function indicated.

13) $\sin\theta; \left(4, 2\sqrt{5}\right)$

14) $\cot\theta; \left(-10, -14\right)$

15) $\cos\theta; \left(-3, 4\right)$

16) $\csc\theta; \left(14, 7\right)$

Answers to

1) $\left\{-\frac{13}{3}\right\}$

2) $\{-2\}$

3) -0.2617

4) 0.3869

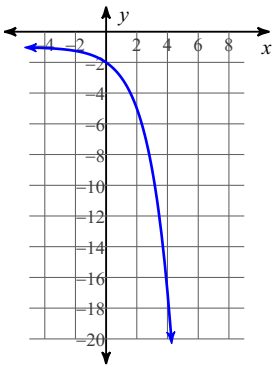
5) $\{2\}$

6) $\left\{-\frac{e^4}{40}\right\}$

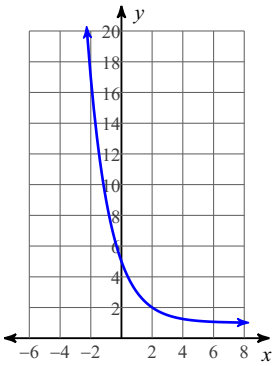
7) $\{-5\}$

8) $\{8\}$

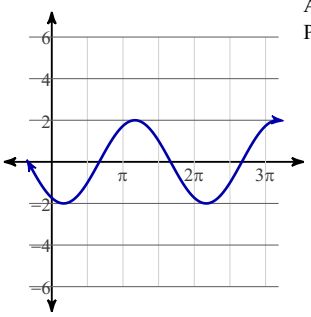
9)



10)

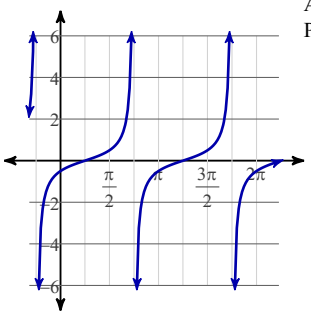


11)



Amplitude: 2
Period: 2π

12)



Amplitude: None
Period: π

13) $\frac{\sqrt{5}}{3}$

14) $\frac{5}{7}$

15) $-\frac{3}{5}$

16) $\sqrt{5}$