

A

Name _____

SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.

Solve the equation.

1) $2^{7-5x} = \frac{1}{32}$

Show Work

$$\begin{array}{l} \curvearrowright \\ 2^{(7-5x)} = 1/32 \end{array}$$

1) _____

2) $\log_6(x-4) = 3$ Show Work $\rightarrow \log_6(x-4) = 3$

2) _____

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

Express as a single logarithm.

3) $2 \log_b m - \frac{3}{5} \log_b n + \frac{1}{3} \log_b j - 3 \log_b k$

3) _____

A) $\log_b \left(2m - \frac{3}{5}n + \frac{1}{3}j - 3k \right)$

B) $\log_b \frac{m^2 j^{1/3}}{n^{3/5} k^3}$

C) $\log_b \frac{m^2 n^{3/5}}{j^{1/3} k^3}$

D) $\log_b \frac{m^2 k^3}{j^{1/3} n^{3/5}}$

A

Solve the problem.

$$f(x) = 2^{(x+2)} \quad g(x) = 2^{(-x+4)}$$

4) $f(x) = 2^x + 2$ and $g(x) = 2^{-x} + 4$. Show Work

4) _____

Find the point of intersection of the graphs of f and g by solving $f(x) = g(x)$.

A) (1, 8)

B) (4, 1)

C) (8, 1)

D) (1, 4)

SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.

Find the amount that results from the investment. Show Work

5) \$12,000 invested at 6% compounded quarterly after a period of 5 years

5) _____

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

Solve the problem. Show Work

6) The half-life of a radioactive element is 130 days, but your sample will not be useful to you after 80% of the radioactive nuclei originally present have disintegrated. About how many days can you use the sample?

6) _____

A) 287

B) 312

C) 302

D) 297

SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.

If A denotes the area of the sector of a circle of radius r formed by the central angle θ , find the missing quantity. If necessary, round the answer to two decimal places.

7) $\theta = 90^\circ$, $A = 85$ square meters, $r = ?$

7) _____

A

A point on the terminal side of an angle θ is given. Find the exact value of the indicated trigonometric function of θ .

8) $(-3, -1)$ Find $\sec \theta$. Show Work

8) _____

Find the exact value of the indicated trigonometric function of θ .

9) $\sec \theta = \frac{9}{8}$, θ in quadrant IV Find $\tan \theta$. Show Work

9) _____

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

Write the equation of a sine function that has the given characteristics.

10) Amplitude: 4

10) _____

Period: 3

A) $y = 4 \sin\left(\frac{2}{3}\pi x\right)$

B) $y = \sin(3\pi x) + 4$

C) $y = 4 \sin(3x)$

D) $y = 3 \sin\left(\frac{1}{2}\pi x\right)$

Find the phase shift of the function.

11) $y = -4 \sin\left(x - \frac{\pi}{2}\right)$

11) _____

A) $\frac{\pi}{2}$ units to the left

B) -4 units down

C) $\frac{\pi}{2}$ units to the right

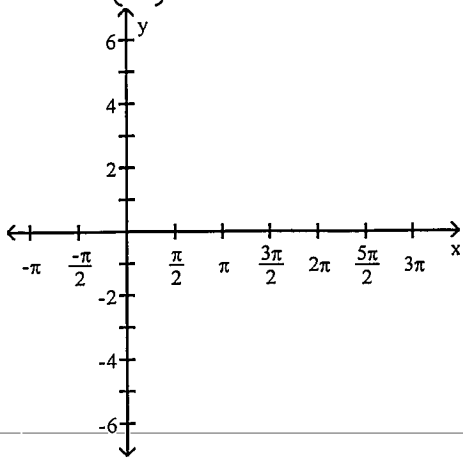
D) -4 units up

A

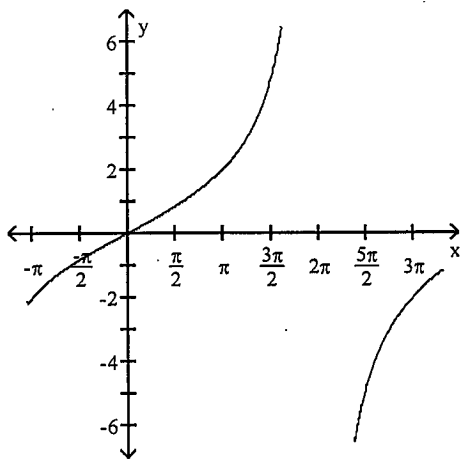
Graph the function.

12) $y = 4 \tan\left(\frac{1}{2}x\right)$

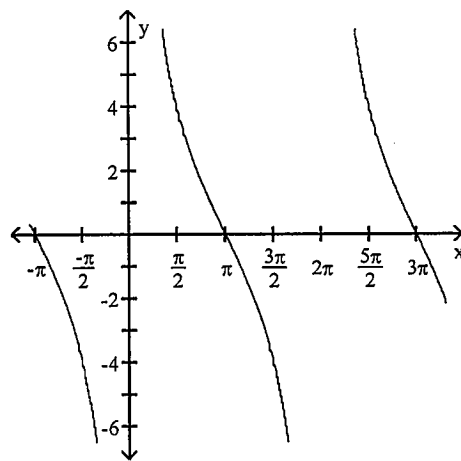
12) _____



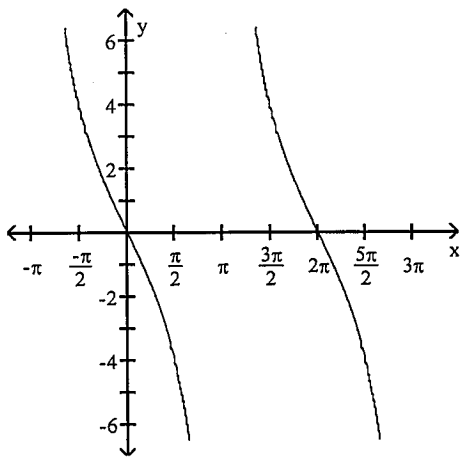
A)



B)



C)



D)

