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Exam

Name _____

TA: Math 121 Exam II a Fall 2011 Sections 5.3-5.8 6.1-6.6

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

Solve the equation.

1) $64^x - 4 = 16^{3x}$

1) _____

Use the Change-of-Base Formula and a calculator to evaluate the logarithm. Round your answer to three decimal places.

2) $\log_3 281.9$

2) _____

Solve the equation.

3) $\log(3 + x) - \log(x - 5) = \log 3$

3) _____

2a

Find the effective rate of interest.

4) 4.25% compounded monthly

4) _____

Solve the problem.

5) A fossilized leaf contains 6% of its normal amount of carbon 14. How old is the fossil (to the nearest year)? Use 5600 years as the half-life of carbon 14.

5) _____

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.

6) $\theta = 5$ radians, $A = 56$ square meters, $r = ?$

6) _____

2a

In the problem, $\sin \theta$ and $\cos \theta$ are given. Find the exact value of the indicated trigonometric function.

7) $\sin \theta = \frac{1}{4}$, $\cos \theta = \frac{\sqrt{15}}{4}$ Find $\cot \theta$.

7) _____

Solve the problem.

8) For the equation $y = -\frac{1}{2} \cos(2x - 2\pi)$, identify (i) the amplitude, (ii) the phase shift, and (iii) the period.

8) _____

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.

9) Amplitude: 4
Period: 3

9) _____

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

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

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

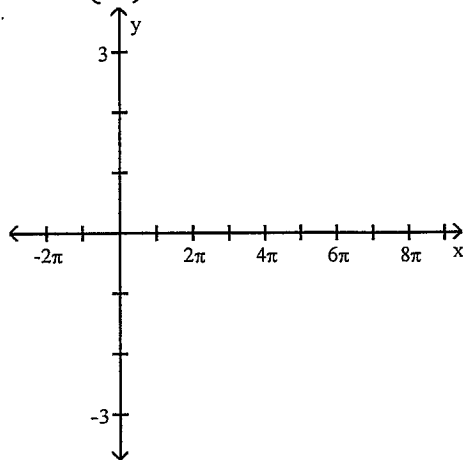
D) $y = \sin (3\pi x) + 4$

2^a

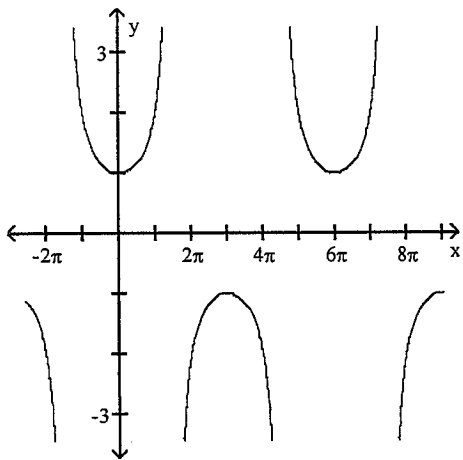
Graph the function.

10) $y = \sec\left(\frac{1}{3}x\right)$

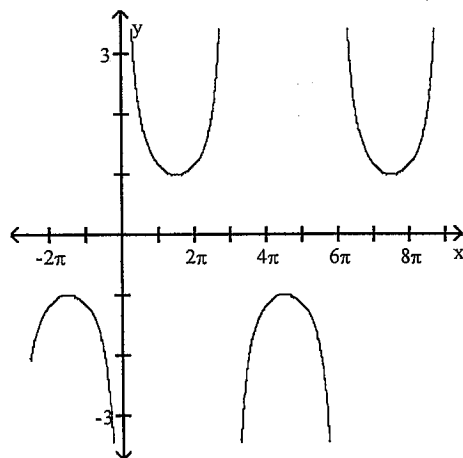
10) _____



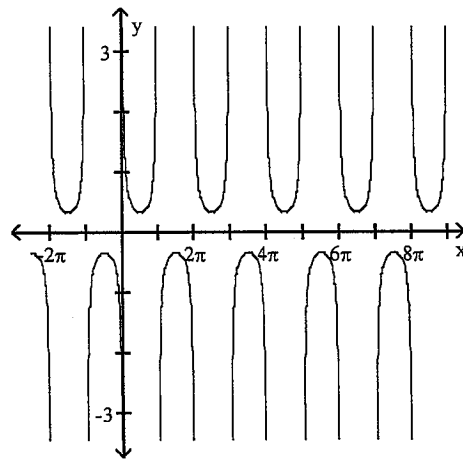
A)



C)



B)



D)

