

Name _____

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.**Solve the equation. If necessary, round to thousandths.**

1) $5e^{2x+5} = 20$

A) -1.807

B) -2.200

C) 3.193

D) 7.500

Answer: A

Objective: (3.3) Solve Exponential Equation

Use a change of base formula to evaluate the given logarithm. Approximate to three decimal places.

2) $\log \sqrt{6} (64.7)$

A) 0.389

B) 4.654

C) 0.215

D) 2.327

Answer: B

Objective: (3.3) Use Change of Base Formula to Evaluate Logarithm

Solve the inequality.

3) $3^{-x} > \frac{1}{27}$

A) $x < \frac{1}{9}$

B) $x > \frac{1}{3}$

C) $x > -3$

D) $x < 3$

Answer: D

Objective: (3.3) Solve Exponential Inequality

Use the properties of logarithms to evaluate the expression.

4) $\log_a a^2$

A) 1

B) a^2

C) $2\log_a a$

D) 2

Answer: D

Objective: (3.3) Use Properties of Logarithms to Evaluate Expression

Solve the problem.

5) At the end of t years, the future value of an investment of \$7000 in an account that pays 7% APR compounded monthly is $S = 7000 \left(1 + \frac{0.07}{12}\right)^{12t}$ dollars. Assuming no withdrawals or additional deposits,

how long will it take for the investment to reach \$21,000? Round to three decimal places.

A) 12.592 years

B) 15.740 years

C) 18.888 years

D) 23.610 years

Answer: B

Objective: (3.3) Solve Apps: Exponential Equations

Solve the equation.

6) $400e^{0.284x} = 1600$ (Round to three decimal places.)

A) 0.205

B) -0.205

C) 4.881

D) -4.881

Answer: C

Objective: (3.3) Solve Exponential Equation

- 14) \$9000 is invested at 8% compounded quarterly. In how many years will the account have grown to \$14,500?
Round your answer to the nearest tenth of a year.

A) 1.1 years B) 13.2 years C) 6.2 years D) 6 years

Answer: D

Objective: (3.5) Solve Apps: Find Year, Interest, Doubling Time

Evaluate.

15) $P \left(1 + \frac{r}{k} \right)^{kn}$ for $P = \$14,000$, $n = 4$, $r = 11\%$, $k = 2$

A) \$21,485.61 B) \$7485.61 C) \$20,365.51 D) \$21,252.99

Answer: A

Objective: (3.5) Use Formula to Find Future Value

Solve the problem.

- 16) How long would it take \$7000 to grow to \$35,000 at 6% compounded continuously? Round your answer to the nearest tenth of a year.

A) 27.6 years B) 27.1 years C) 26.0 years D) 26.8 years

Answer: D

Objective: (3.5) Solve Apps: Find Year, Interest, Doubling Time

- 17) An initial investment of \$1260 is appreciated for 2 years in an account that earns 8% interest, compounded continuously. Find the amount of money in the account at the end of the period.

A) \$4780.02 B) \$1478.62 C) \$1617.87 D) \$68,793.67

Answer: B

Objective: (3.5) Solve Apps: Find Future Value

- 18) You have money in an account at 8% interest, compounded monthly. To the nearest year, how long will it take for your money to double?

A) 7 years B) 9 years C) 12 years D) 5 years

Answer: B

Objective: (3.5) Solve Apps: Find Year, Interest, Doubling Time

- 19) Assume the cost of a gallon of milk is \$2.80. With continuous compounding, find the time it would take the cost to be 5 times as much (to the nearest tenth of a year), at an annual inflation rate of 6%.

A) 9.9 years B) 26.8 years C) 0.1 year D) 0.0 year

Answer: B

Objective: (3.5) Solve Apps: Find Year, Interest, Doubling Time

- 20) Find the amount of money in an account after 6 years if \$2900 is deposited at 8% annual interest compounded monthly.

A) \$4601.94 B) \$4664.47 C) \$4642.99 D) \$4679.16

Answer: D

Objective: (3.5) Solve Apps: Find Future Value