

Name: _____

Date: _____

Instructions: Please complete the following problems for practice. A fun crossword puzzle is on the back to practice some vocabulary.

Problem 1. What is the domain and range of $f(x) = a^x$?

Problem 2. Sketch $f(x) = 4^x$

Problem 3. Sketch $f(x) = \left(\frac{1}{4}\right)^x$

Problem 4. The graph of $y = 5^x$ is translated 10 units to the left and then 2 units up. What is the new equation?

Problem 5. Describe the transformations on $y = -2 \cdot 3^{x-4} - 1$ from the parent function $y = 3^x$

Problem 6. Evaluate $f(-2)$ for: $f(x) = (-3)^x - 2$

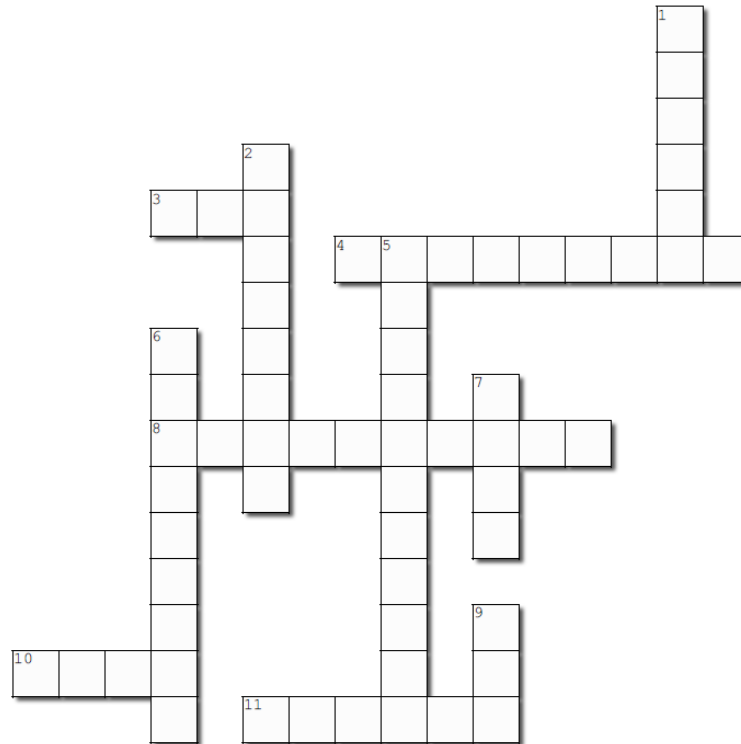
Problem 7. What is the range of: $f(x) = -3^x - 2$

Problem 8. An account earns simple interest at a rate of 4% per year. If \$2,500 is deposited, how much money is in the account after 8 years? (You may use a calculator to answer this question).

Problem 9. You deposit \$10,000 at 5% compounded semiannually for 5 years. How much will be in your account after 5 years? And how much interest is received? (You may use a calculator to answer this question).

Problem 10. \$12,000 is deposited into two accounts. One account earns interest at a rate of 7% compounded monthly, and the other at a rate of 6.85% compounded continuously. Which account earns more after 3 years? (You may use a calculator to answer this question).

***Note:** On the exam you won't be allowed a calculator. You will either be asked to solve something with very simple numbers, or asked to set up the problem - but don't solve.

**Across**

3. Compound semiannually means n is what?
4. When the base of an exponential is $0 < a < 1$, it _____ to the right.
8. $A = Pe^{rt}$ is the _____ compound interest formula.
10. The graph of $f(x) = a^x$ has how many x -intercepts?
11. Compound monthly means n is what?

Down

1. $I = Prt$ is the _____ interest formula.
2. $A = P(1 + r/n)^{nt}$ is the _____ interest formula.
5. A function in the form: $f(x) = a^x$ is called this.
6. When the base of an exponential is $a > 1$, it _____ to the right.
7. Compound quarterly means n is what?
9. The graph of $f(x) = a^x$ has how many y -intercepts?