MATH114 COLLEGE MATH & STATISTICS 100pts TEST 3 Fall'11 p.1 INSTRUCTOR: CARLA MORRIS
NAME: _____

5pts 1. Use your calculator to evaluate $\mathbf{e}^{1.48}$

5pts 2. Graph $\mathbf{y = (3)^{-x}}$

5pts 3. Write in exponential form: $\mathbf{\log_7 49 = 2}$

5pts 4. Write in logarithmic form: $\mathbf{3^6 = 729}$

5pts 5. Solve for x: $\mathbf{\log_5 125 = x}$

5pts 6. Evaluate $\mathbf{\ln e^{2.87}}$

5pts 7. Evaluate $\mathbf{\log_{10} 10{,}000}$

5pts 8. Use logarithmic properties to write the following as a single logarithm

$$\mathbf{2\log_5(x + 3) - 4\log_5(2x + 1)}$$

6pts 9. If $\mathbf{y(t) = 875e^{0.35t}}$ what is y when a) $\mathbf{t = 0}$?

b) $\mathbf{t = 10}$?

5pts 10. If $250,000 is borrowed for 42 months at 6% annual interest, how much simple interest is due at the end of this time?

5pts 11. Write the first three terms of the sequence whose n^{th} term is $\mathbf{a_n = \frac{n^2 + 5}{2n + 7}}$

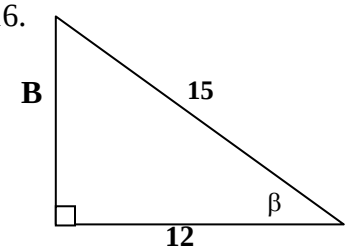
5pts 12. Write the next 5 terms of the **arithmetic sequence 5, 18, ...**

6pts 13. If $250,000 is invested at 4% annual interest compounded quarterly for 15 years, how much interest will be earned at the end of this time?

6pts 14. How much will $500,000 compounded continuously at 3.5% for 8 years be worth at the end of that time?

5pts 15. Write 3 additional terms of the **geometric sequence 4, 12, ...**

6pts 16.



a) Find the length of side **B**

b) Find sinβ

c) Find β (in degrees)

5pts 17. A person 575 feet away from the base of a building must look up at an angle of 40 degrees to see the top of the building. How tall is the building?

5pts 18. Given the coordinates for a 30 degree angle are ($\sqrt{3}$ /2, 1/2) what is the sine of 330 degrees? Use the unit circle to explain your answer.

6pts 19. a) Convert 240 degrees to radians

b) Convert $5\pi/6$ radians to degrees

FORMULAS

1) $I = Prt$ **2) SOH CAH TOA** **3) $a^2 + b^2 = c^2$** **4) $\pi = 180°$**

5) $A = Pe^{rt}$ **6) $A = P(1 + r/n)^{nt}$**