AFM Unit 3 Quiz 2 Name:_____

Solve for x. Please show work on a separate sheet of paper.

1. $\frac{1}{2}^{x} * 64^{3x} < \frac{1}{8}^{(x-4)}$ _____

2. $\log_3(x-1) = 2$ _____

3. $\log_7(8x+20) = \log_7(x+6)$ _____

4. $\log_4(x^2-4) - \log_4(x+2) = \log_4 1$ _____

5. $\log_6(2x-5) + 1 = \log_6(7x+10)$ _____

6. $2\log_5(x^2+9) - 2 = 0$ _____

Use $\log_{10} 4 \approx 0.6021$ *and* $\log_{10} 6 \approx 0.7782$ to approximate the value of each expression. You must show work using the properties. If you just give approximations, you will receive no credit.

7. $\log_{10} 24$ _____

8. $\log_{10} 1.5$ _____

9. $\log_{10} 16$ _____

10. Write an exponential function whose graph passes through (0, 4) and (15, 148).

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11. The value of a new car just purchased from the dealership is $25,995. After 5 years, the value of the car has decreased to $15,550. Write an exponential model to represent the value of the car after x years.

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12. Using your equation from #11 find the value of the car after 12 years.

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