SM3-A HW #7-9 (Review) Period____

Solve each equation. Remember to check for extraneous solutions.

1) $\sqrt{-4 - 17n} = 8$

2) For the following function: (a) what is the domain? (b) what is the range?

$f(x) = 2 \cdot 0.25^x$

3) A bar of steel was removed from a blast furnace at 1100 F. It was then "quenched" by dipping it into a tank of oil that was at 120 F. It took 2 minute to reduce the temperature of the steel bar to 300 F.
a) What is base of the exponential (accurate to 3 decimal places)?
b) How long must the steel bar be quenched to lower its temperature to 200 F?

4) CitiBank will pay 2.5% annual interest compounded continuously.   If you deposit $2500, how much money will you have after 12 years? $A(t) = A_o e^{rt}$

5) Zions Bank will pay 6.75% annual interest compounded continuously.   If you deposit $300, how long will it take for your money to double?

6) Citi Bank will pay 6.75% annual interest compounded annually.   If you deposit $300, how long will it take for your money to double?

7) An arrow is shot up from the top of 20 story building (200 feet tall) with an initial upward velocity of 250 feet per sec. The modeling equation is $h(t) = -16t^2 + 250t + 200$

a) What is the maximum height the arrow will reach?
b) When will it reach that height?
c) When will it hit the ground at the bottom of the cliff?

Solve each question. Round your answer to the nearest hundredth.

8) Aliyah can clean an attic in 16 hours. Alberto can clean the same attic in 12 hours. If they worked together how long would it take them?

9) Working alone, Jessica can pick forty bushels of apples in 13 hours. Daniel can pick the same amount in 10 hours. How long would it take them if they worked together?

-1-Made with Infinite Algebra 2.

Write each expression in exponential form.

10) $\left(\sqrt[3]{4x}\right)^5$

11) $\left(\sqrt{n}\right)^3$

Write each expression in radical form.

12) $x^{\frac{2}{3}}$

13) $(2x)^{\frac{3}{4}}$

Simplify. Your answer should contain only positive exponents with no fractional exponents in the denominator.

14) $2m^2n^{-3} \cdot m^{\frac{4}{3}}n^2$

15) $4mn^{\frac{1}{3}} \cdot m^{-\frac{1}{2}}n^{-\frac{3}{2}} \cdot 2n^{\frac{3}{2}}$

Simplify.

16) $\left(x^{\frac{3}{2}}y^{\frac{2}{3}}\right)^2$

17) $3\sqrt{54} + 2\sqrt{6}$

18) $\sqrt{10}\left(3 + 4\sqrt{2}\right)$

19) $\sqrt[3]{-320x^6y^7}$

20) $\sqrt{48x^3y}$

21) $\dfrac{\sqrt{15}}{5\sqrt{27}}$

22) $\dfrac{3\sqrt{25}}{3\sqrt{4}}$