Math 3 Name: _____

Semester 2 Review #3

SHOW ALL WORK NEATLY!

1. You deposit $500 in an account that pays 2.5% annual interest compounded monthly. How long will it take for the balance to double?

2. You deposit $3600 in an account that pays 5.75% annual interest compounded continuously.
   a) What is your account balance after 5 years?
   b) In how many years will your balance reach $12,000?

3. $36^{5x+2} = \left(\frac{1}{6}\right)^{11-x}$

4. $\frac{1}{3}(4)^{-5x} + 2 = 5$

5. $10(2)^{6-4x} + 4 = 100$

6. $36^{-2x-2}\left(\frac{1}{6}\right)^{-2x} = 6^{2x-4}$

7. $\log_4(-m) + \log_4(m+10) = 2$

8. $4\ln(-t) + 3 = 21$

9. $\log(x^2+4)^5 = 10$

10. $\ln(x+1) - \ln 2 = 1$

Spiral Review:

11. $\frac{x-3}{x} = \frac{x-4}{x-2}$

12. $\frac{18}{x^2-3x} - \frac{6}{x-3} = \frac{5}{x}$

13. $\frac{x+3}{x^2-2x-8} - \frac{x-5}{x^2-12x+32}$

14. $\frac{3r-12}{r+5} \cdot \frac{r+6}{2r-8}$

KEY:

1. 27.53 years 2. $4799.13; 20.94 years 3. $-\frac{5}{3}$ 4. -0.32 5. 0.6842
6. 0 7. -8, -2 8. -90.017 9. $\pm 4\sqrt{6}$ 10. $2e-1$ 11. 6
12. no solution 13. $= \frac{-2(x+7)}{(x-4)(x+2)(x-8)}$ 14. $\frac{3(r+6)}{2(r+5)}$