Semester 2 Review #4

1. How much money must be deposited now in an account paying 7% annual interest, compounded yearly, to have a balance of $1000 after 6 years?

2. A large city is growing by a rate of 0.8% annually. If there were 3,390,000 residents of the city in 1992, predict how many (to the nearest thousand) will be living in the city in 1997. Use $y = 3,390,000(2.7)^{0.008t}$, where $t = 0$ represents 1992.

Evaluate the expression without using a calculator.

3. $\log \dfrac{1}{1000}$

4. $\log_2 32$

5. $\log_2 0.25$

6. $\log_{\frac{1}{2}} 8$

7. $\ln e^2$

Solve the equation. Check for extraneous solutions.

8. $2\log_3 y = \log_3 4 + \log_3 (y+8)$

9. $2e^x - 1 = 9$

10. Condense the expression $\log_4 3 + 3\log_4 2$.

Rewrite each degree measure in radians and each radian measure in degrees.

11. $18°$

12. $\dfrac{3\pi}{2}$

Evaluate the function without using a calculator.
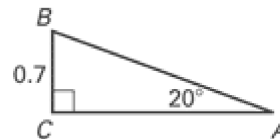
13. $\sin 720°$

14. $\cos (-180°)$

15. $\tan \dfrac{7\pi}{4}$

16. $\sec \dfrac{5\pi}{4}$

Solve $\triangle ABC$.

17.

Simplify.

18. $\dfrac{4e^4}{e^5} \cdot \dfrac{e}{-2}$

Semester 2 Review #4
Answer Section

1. $666.34
2. 3,527,000
3. –3
4. 5
5. –2
6. –3
7. 2
8. 8; (–4 is extraneous)
9. ln 5
10. $\log_4 24$
11. $\dfrac{\pi}{10}$
12. 270°
13. 0
14. –1
15. –1
16. $-\sqrt{2}$
17. $B = 70°$, $b \approx 1.93$, $c \approx 2.05$
18. –2