Name: _____ Date:_____ Period: _____

End-of-Unit 6 Review – Integration and Accumulation of Change
Lessons 6.6 through 6.14

Reviews do NOT cover all material from the lessons but will hopefully remind you of key points. To be prepared, you must study all packets from Unit 6.

Find the value of the definite integral.

1. $\int_{-2}^{-1}\left(\frac{1}{x^2}+x^2-5x\right)dx$

2. $\int_{-1}^{8}\left(x^{2/3}-x\right)dx$

3. $\int_{0}^{\pi}(x-\sin x)\,dx$

4. $\int_{-1}^{1}x\sqrt{1-x^2}\,dx$

5. $\int_{0}^{\frac{\pi}{6}}\frac{\sin(2x)}{\cos^2(2x)}\,dx$

6. $\int_{e}^{e^2}\frac{1}{x\ln x}\,dx$

7. If $\int_{-5}^{2}f(x)dx=-17$ and $\int_{5}^{2}f(x)dx=4$, what is the value of $\int_{-5}^{5}f(x)dx$?

(A) -21 (B) -13 (C) 0   (D) 13   (E) 21

Find the following indefinite integrals.

8. $\int \left(\frac{x^2-x+5}{x}\right) dx$

9. $\int \sec x \tan x \, dx$

10. $\int (e^x + 2^x) \, dx$

11. $\int \left(\frac{1}{x} + \frac{1}{x^3}\right) dx$

12. $\int \sqrt{x} \left(x - \frac{4}{x}\right) dx$

13. $\int \frac{50x^3 - 55x^2 - 26x + 33}{10x - 7} dx$

14. $\int \frac{1}{x^2 + 2x + 2} dx$

15. **Calculator active problem.** If $f'(x) = \sin(e^x)$ and $f(0) = 5.7$, then $f(2) =$