

AP:

Homework  
2/12 – 2/16

due: Tuesday: read pg. 173

1. pg. 178 / #11, 12, 13
2. Find  $y'$ :
  - a.  $y = 10^{x^2-2x}$
  - b.  $y = 2^{5x} \cdot 3^{4x^2}$
  - c.  $y = (x^3 + 3) \cdot 2^{-7x}$
  - d.  $y = (4e^x)^{6x}$
  - e.  $y = 2^{\ln x}$
  - f.  $y = \ln 2^x$
3. Write an equation of the tangent line to the curve  $y^2 \cdot 4^y = x \cdot 2^x$  at (4,2).
4. Let  $f$  be the function defined by  $f(x) = 5^{\sqrt{4x^2-1}}$ .
  - a. Is  $f$  an even or an odd function? Justify your answer.
  - b. Find the domain of  $f$ .
  - c. Find the range of  $f$ .
  - d. Find  $f'(x)$ .

Wednesday:

1. Evaluate:
  - a.  $\int 3^{2x} dx$
  - b.  $\int 5^{x^4+2x}(2x^3 + 1)dx$
  - c.  $\int 7x^2 \cdot 10^{x^3} dx$
  - d.  $\int \frac{1}{2^x} dx$
  - e.  $\int 2^{\sin 4x} \cos 4x dx$
2. A particle moves along the x-axis according to the equation of motion  $s(t) = t^{\frac{1}{2}}$ . Find the velocity of the particle at  $t = 2$ .
3. Find the area of the region bounded by  $y = e^x$ ,  $y = 2^x$ , and  $x = 1$ .
4. Let R be the region bounded by  $y = 3^x$ ,  $x = 1$ , and  $y = 1$ .
  - a. Find the area of R.
  - b. Find the volume of the solid generated when R is rotated about the x-axis.

Thursday:

1. Solve for  $x$ :
  - a.  $3^{\log_3 7} + 2^{\log_2 5} = 5^{\log_5 x}$
  - b.  $8^{\log_8 3} - e^{\ln 5} = x^2 - 7^{\log_7 3x}$
  - c.  $7^x = 4^{x+1}$
2. Show:  $\log_b x = \frac{\ln a}{\ln b} \cdot \log_a x$
3. Determine the following logs:
  - a.  $\log_4 64$
  - b.  $\log_9 27$
  - c.  $\log_5 25\sqrt{5}$
  - d.  $\log_2 \frac{1}{32}$

Friday: read pg. 175

1. pp. 178 – 179 / #21, 23, 24, 25, 26, 27, 41, 42
2. When simplified what does the expression  $(\log_5 2)(\log_2 25)$  equal?

Monday: read pg. 351

1. pg. 357 / #23a, 24
2. pg. 359 / #39