Problem Set 1
CS&SS 505

January 07, 2021

1. $\sum_{k=1}^{4}(k-1)^2$

2. $\prod_{i=2}^{10}\frac{(i+1)}{i}$

3. $\log(\mathrm{e}^2)$

4. $\mathrm{e}^4\mathrm{e}^{10}$

5. $10^3 10^{-2}$

6. $400^{\frac{1}{2}}$

7. Evaluate $f(x,y) = 3x/4y - 1$ for $x = 16$ and $y = 2$

8. Simplify $x/x/x$

9. Compute the root(s) of the following quadratic equation:

$$x^2 - 8x + 12 = 0$$

10. Compute the root(s) of the following quadratic equation:

$$x^2 + 5x + 4 = 0$$

11. Suppose the supply curve for oil is expressed with the following linear equation:

$$-x + 4y = 30$$

And the demand curve is expressed with this equation:

$$2x + 5y = 9$$

Solve the system of linear equations to compute the equilibrium cost. Plot the two lines.

12. Suppose the supply curve for newest elementary school fad, $GaGaGoggles^{TM}$, is expressed with the following equation:

$$2x + y = 6$$

And, the demand curve is expressed with this quadratic equation:

$$-8x^2 + 24x - 4y = 0$$

Solve the system of linear equations to compute the equilibrium cost. Plot the two lines.

13. Compute the limit:

$$lim_{x\to\infty}x^4$$

14. Compute the limit:

$$lim_{x\to 2}x^4$$

15. Compute the limit:

$$lim_{x\downarrow 3}\frac{1}{x-3}$$