Show all your work to get full/ partial credit. Each question (as well as part) is worth 5 points, but # 5 (both parts) is worth 5 points.

1. Given the interval, \((-1, 3]\), graph the set and write the set in set-builder notation.

2. Your power company charges $0.10 per kilowatt-hour (kWh) used and $15.50 in monthly taxes.
   a. Write a formula for the monthly charge \(C\) if you use \(k\) kilowatt-hours.
   b. If you use 1,000 kWh this month, what will the monthly charge be?

3. Simplify: \(3 - 2[7x + 3 - 4(x - 2y)]\).

4. Simplify and write the answer with positive exponents only: \((-4w^{-2}z)^{-2}(3w^{-6}y^0z^4)^3\).

5. Write the following numbers in scientific notation.
   a. 0.0000356
   b. 12400

6. Write the following expressions using radical notation and simplify if possible.
   a. \((-8)^{\frac{2}{3}}\)
   b. \(7t^{\frac{3}{5}}\)

Completely factor #s 7 and 8:

7. \(ab + 4a - 8b - 2b^2\)
8. \(2x^2 + x - 10\)
9. a. Simplify: \( \frac{4}{x^2-9} - \frac{1}{x-3} \).

b. And, state any restrictions on the variable \( x \).

10. Check (show work) if the following equation is conditional, contradiction, or identity.
\( 4(3 - 5w) + 1 = -4w - 8 - 16w \).

11. Solve \( A = P + Prt \) for \( P \).

12. A 6 ft man is standing 40 ft from a light post. If the man’s shadow is 20 ft, determine the height of the light post.

Simplify the following:

13. \( \sqrt{75ab^4} \)

14. \( (3y)\left(\frac{1}{3}y^2 - 4y - 2\right) \)

15. \( (2x - \sqrt{3})^2 \)

16. \( \frac{8}{\sqrt{2y}} \) (don’t forget to rationalize the denominator)

17. \( \frac{|7-4| + (5-2)^2}{\sqrt{4^2 - 7}} \)