Discussion Posting Assignment 1
Algebra Reference Chapter

**Directions:** Complete the following problems to the best of your ability. Post the work-out solution to ONE of the problems as instructed on the discussion board.

Problem 1: Factor $12xyz + 6x^2y^3 - 15x^3z$

Problem 2: Solve the given equation: $\frac{1}{2}\ + \frac{4}{x + 1} = \frac{3}{5}$

Problem 3: Solve the given equation: $\frac{2x - 7}{6} = \frac{x + 4}{5}$

Problem 4: Solve the given equation: $2x^2 - 35 = 9x$

Problem 5: Solve the given inequality. Note the answers are in interval notation.

$4x - 7 < 9 - x$

Problem 6: Solve the given equation for $b$:

$A = \frac{(B + b)h}{2}$

Problem 7: Solve the given equation $y^2$:

$\frac{x^2}{a} + \frac{y^2}{b} = r^2$

Problem 8: Multiply and simplify:

$\frac{3x^4yz^3}{15x^2y^2} * \frac{10xy}{z^6}$

Problem 9: Divide and simplify:

$\frac{a - 4b}{a^2 + ab} * \frac{20b - 5a}{b^2 - a^2}$

Problem 10: Add and simplify:

$\frac{7}{2x} + \frac{5}{6x}$
Problem 11: Simplify the given expression. Do not leave negative exponents.

\[
\left( \frac{x^{-5}y^{-1}}{x^{-2}x^4} \right)^{-5}
\]

Problem 12: Simplify the given radicals. (You must post both parts if you choose this problem).

(a) \(\sqrt[3]{36x^3y^2}\)

(b) \(\sqrt[3]{128ab^3}\)

Problem 13: Given the points (3, 5) and (1, -2), find the equation of the line that passes thru those two points. Write the equation in general form \((ax + by = c)\).

Problem 14: Given the points (1, 8) and (1, -6), find the equation of the line that passes thru those two points. Write the equation in general form \((ax + by = c)\).