1. Perform the operations and simplify.
   (a) \( \frac{(3x^2)^{3/2}}{3^{3/2}x^4} \)

   (b) \( \frac{3x + 3}{x - 2} + \frac{5}{2 - x} \)

2. Completely factor the expression.
   (a) \( 2x^3 - x^2 - 8x + 4 \)

   (b) \( 6(x - 2)^2(x + 1)^4 + 3(x - 2)^2(x + 1)^3 \)
3. Completely simplify the expressions.

(a) \( \frac{\sqrt{x} - \frac{1}{2\sqrt{x}}}{\sqrt{x}} \)

(b) \( \frac{3x(1 + x^2)^{1/2} - 3x^3(1 + x^2)^{-1/2}}{x^2} \)

4. Evaluate each expression.

(a) \( 32^{-3/5} = \)

(b) \( \left( \frac{16}{81} \right)^{-3/4} = \)

(c) Arrange the values (a)-(b) in increasing order (smallest to largest - using < or \( \leq \)).
5. Find all solutions of the equations below.

(a) \( t^2 - 8t + 18 = 3 \)

(b) \( x - \sqrt{17} - 8x = 3 \)

(c) \( x^4 - 4x^2 + 3 = 0 \)

(d) \( 3x^2 - 6x = \frac{1}{2} \)
6. Solve the inequality and clearly write the solution set (the interval(s)).

(a) $|7 - x| < 4$

(b) $2x^4 - 3x^3 - 2x^2 < 0$

(c) $\frac{x^2 + 2x}{x^2 - 9} \leq 0$
7. Given the equation \( y = -\frac{1}{2}x + 2 \).

(a) Sketch a graph of the line \( y = -\frac{1}{2}x + 2 \).

(b) Find the \( x \)-intercept of \( y = -\frac{1}{2}x + 2 \), and identify this point on your graph.

(c) Using your sketch of the line (at right), write (below) the interval(s) on which \( y > 0 \).

8. Find an equation of the line passing through the points \((-1, -3), (3, 0)\).

9. Given the line shown in the figure at right.

(a) Determine the slope of the line.

(b) Write an equation of the line.