1.) (4 points) Solve.
\[
\frac{3}{14}(2x - 4) + \frac{3x}{2} = \frac{5}{21}(-x + 8) + 1
\]

2.) (4 points) 5.4 is what percent of 18?

3.) (4 points) Solve \(x^2y + 2xy = 1 - 3xy\) for \(y\).

4.) (5 points) At what price should a home be listed if the owner wants to make $300,000 on its sale after paying a 7% real estate commission? Round answer to nearest dollar.

5.) (5 points) Joe can paint a house in 5 days and Alice can paint a house in 4 days. If Joe and Alice work together how long will it take then to paint a house?

6.) (4 points each) Find the equation of the line.
   a.) Slope 3, passing through (1,-1).
   b.) Passing through (9,-4), and (6,4).

7.) (4 points) Graph linear inequality.
\[2x - 3y \leq 7\]

8.) (6 points) Solve system using elimination.
\[
\begin{align*}
9x + 4y &= -1 \\
5x - 3y &= 2
\end{align*}
\]

9.) (4 points) Perform each division.
\[3x^4 + x^3 + x^2 - 9 \text{ divided by } x^2 + 4x - 1\]

10.) (4 points) Simplify using properties of exponents.
\[
\left(\frac{-3x^2y^{-3}}{2y^5}\right)^2
\]

11.) (4 points each) Factor.
   a.) \[21x^2 + 92x + 96\]
   b.) \[x^{12} - 1\]

12.) Simplify
   a.) (3 points) \[\frac{28x^2 - 56}{-x^2 + 2}\]
b.) (5 points) \[ \frac{10x^2-19x+7}{2x^2+3x+1} \div \frac{2x^2-3x+1}{x^2-1} \]

13.) (5 points) Add or subtract.
\[ \frac{2}{2x^2+x-1} - \frac{1}{x^2-1} \]

14.) (5 points) Simplify complex fraction.
\[ \frac{(2x^2+x)-x}{5(\frac{4x}{x+1})-2} \]

15.) (4 points each) Simplify.

a.) \[ \sqrt{1800x^2y^{12}} \]

b.) \[ \sqrt{150} + \sqrt{54} - 5\sqrt{12} + \sqrt{300} \]

16.) (4 points) Rationalize the denominator.
\[ \frac{\sqrt{8}}{\sqrt{2} - 3} \]

17.) Solve.

a.) (4 points) \[ 5x^2 - 8x = 1 \]

b.) (5 points) \[ -1 + \frac{5}{x-7} = \frac{2x}{x+3} \]

c.) (5 points) \[ 3x + \sqrt{7x + 1} = x + 4 \]