1. Solve for \( t \) (Answer must be in simplest fractional form.)

\[
H = \frac{K(t - p)}{L}
\]

2. Solve for \( x \) by factoring (Show work for credit.)

\[
2x^2 = 19x + 33
\]

3. Solve by completing the square. (Show work.) Answer must be in simplest radical form or simplest \( a + bi \) form)

\[
9x^2 - 18x + 3 = 0
\]
4. Solve by quadratic formula (Answer must be in simplest radical form, simplest \( a + bi \) form, or simplest fractional form.)

(7) \( 3x^2 - 2x + 5 = 0 \)

\[ x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a} \]

5. Solve the following inequalities. Graph the solution and write your answer using interval notation.

(6) a. \( 3x + 1 \geq 2 \)

\[ x \geq 1 \]

Interval \( [1, \infty) \)

(6) b. \( |x - 7| < 6 \)

\[ -6 < x - 7 < 6 \]

\[ -1 < x < 13 \]

Interval \( (-1, 13) \)
6. Perform the operation and write the result in standard \((a + bi)\) form

\[
\frac{2i}{2+i} + \frac{5}{2-i}
\]

Interval ______________________

7. Find all solutions of the equation.

\[
x^6 + 7x^3 - 8 = 0
\]

8. Find all solutions of the equation.

\[
\sqrt{3}x - 2 + x = 4
\]
9. You plan to invest $12,000 in two funds paying 7 1/2% and 10% simple interest. (There is more risk in the 10% fund). Your goal is to obtain a total annual interest income of $1,000 from the investments. What is the smallest amount you can invest in the 10% fund in order to meet your objective?

10. Find the standard form of the equation of the specified circle: Endpoints of diameter are (-4,-3), (0,-3).

In exercises 11-16 match the equation with its graph. Place the correct letter in the blank. [The graphs are labeled (a), (b), (c), (d), (e), and (f).] (2 pts ea)

11. \( y = 1 - x \) _________
12. \( y = x^2 - 2x \) _________
13. \( y = \sqrt{9 - x^2} \) _________
14. \( y = 2\sqrt{x} \) _________
15. \( y = x^3 - x + 1 \) _________
16. \( y = |x| - 3 \) _________