

1. Solve the following. Check your solutions.

a. $2 + \sqrt[3]{4x - 3} = 7$

b. $\sqrt{x + 40} = \sqrt{x} + 4$

2.
$$\frac{3x^3 + 4x^2 + 7x + 22}{x + 2}$$

a. Divide using Long or Tabular Division

b. Divide using Synthetic Division

c. Find the remaining roots.

3. Solve by factoring.

a. $x^2 - 9x - 70 = 0$

b. $121x^2 - 9 = 0$

c. $6x^2 - 23x + 7 = 0$

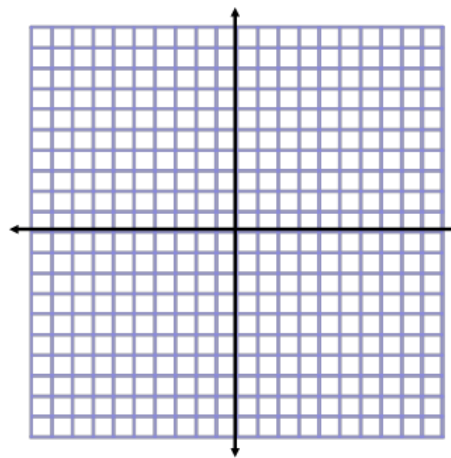
4. Given $f(x) = 2x^2 - 3x - 5$, find the following:

a. x - intercept(s): _____

b. y - intercept: _____

c. Vertex: _____

d. Sketch a graph using key features.



5. Simplify.

a. i^{207}

b. $(12 - 9i) + (8i - 3)$

c. $(12 - 9i)(8i - 3)$

d. $(12 - 9i) - (8i - 3)$

e. $\frac{x^2 - 5x - 66}{4x - 28} \div \frac{x^2 - 12x + 11}{x^2 - 8x + 7}$

f. $\frac{9}{3x - 6} - \frac{18}{x^2 + 2x - 8}$