

1. Let  $w(x) = \frac{1}{4}x^2 - 3x - 8$  and  $m(x) = x + 12$ . Use GeoGebra to determine the following.

a. The points of intersection.

c. Solve  $w(x) < m(x)$

b. Solve  $w(x) = m(x)$

d. Solve  $w(x) \geq m(x)$

2. Let  $p(x) = 6x^2 - 3x + 4$  and  $k(x) = 7$ . Use GeoGebra to determine the following.

a. The points of intersection.

c. Solve  $p(x) > k(x)$

b. Solve  $p(x) = k(x)$

d. Solve  $p(x) \leq k(x)$

3. Solve the following inequalities graphically.

a.  $\left| \frac{2}{3}x + 2 \right| > 4$

b.  $x^2 - 3 \leq 1$

c.  $x^2 - x - 3 > x$

f.  $10x^2 - 11x + 7 \leq 7$

d.  $x^3 + x \leq \frac{1}{6}x^2$

g.  $-10x + 4 < 20x^2 - 34x + 6$

e.  $\sqrt{4-x} > -2-x$

h.  $-15x^2 - 2 \geq 10x - 4$