

1. Use GeoGebra to make a table of values for the function $K(x) = 3x^2 - 8x - 3$.
2. Graph $f(x) = -852x^2 - 622x + 6289$ using Geogebra, zoom and pan until you have a good window to see the graph in, and then create an appropriate table of values based off of the x -values you see in the window.
3. Let $f(x) = -0.00012x^2 - 0.0028x + 0.58$ and $g(x) = 0.00005x^2 + 0.003x - 0.0023$. Graph both functions in GeoGebra, find a good viewing window, and determine the points of intersection of the two functions.
4. Given the function $k(x) = 2(x + 1)^2 + 10$, use GeoGebra to determine the intercepts, vertex, domain, and range of the function.
5. 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.
 - b. Solve $w(x) = m(x)$.
 - c. Solve $w(x) > m(x)$.
 - d. Solve $w(x) \leq m(x)$.

6. Let $h(x) = -10x^2 - 5x + 3$ and $j(x) = -3x - 9$. Use GeoGebra to determine the following:
- a. The points of intersection.
 - b. Solve $h(x) = j(x)$.
 - c. Solve $h(x) \geq j(x)$.
 - d. Solve $h(x) < j(x)$.

7. Use GeoGebra to solve the following equations.

a. $-x^3 + 8x = -4x + 16$

b. $150x^2 - 20x + 50 = 100x + 40$.

8. Use GeoGebra to solve the following inequalities.

a. $-x^2 + 4x - 7 > -12$

b. $-10x^2 - 15x + 4 \leq 9$

9. Given $f(x) = 6x + \frac{1}{2}$, simplify the following expressions.

a. $f(x - 2)$

c. $f(3x)$

b. $f(x) - 2$

d. $3f(x)$

10. Given $h(x) = \frac{6x}{x^2 - 2}$, simplify the following expressions.

a. $h(x - 4)$

c. $3h(x)$

b. $h(-3x)$

d. $h(x) + 2$

11. Given $j(x) = 7x + \sqrt{2 - 5x}$, simplify the following expression:

$$-2j(3x + 1) - 5$$

12. Suppose $T(t) = \frac{28t}{t^2 + 1} + 56$ outputs (approximately) the temperature outside, in Fahrenheit, at t hours past noon on some given day. Let $F(t) = T(t + 1)$ and find a simplified formula for it in terms of t . What does F represent?