

Section 1.3

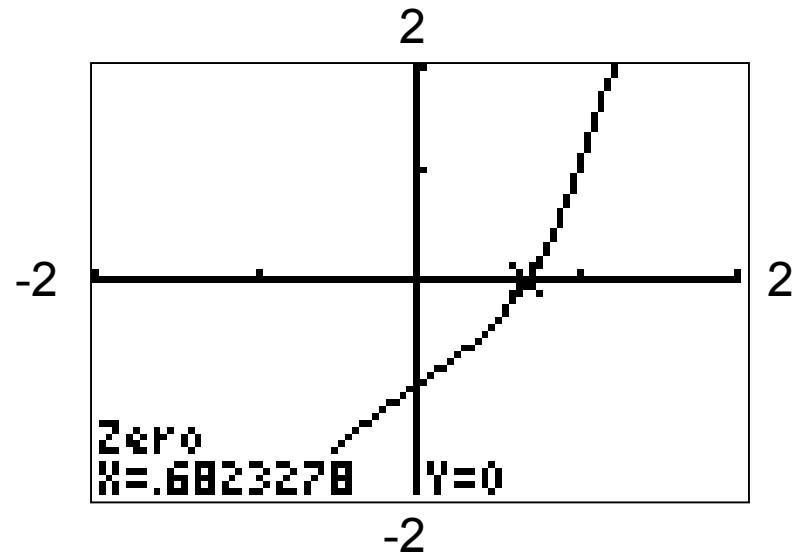
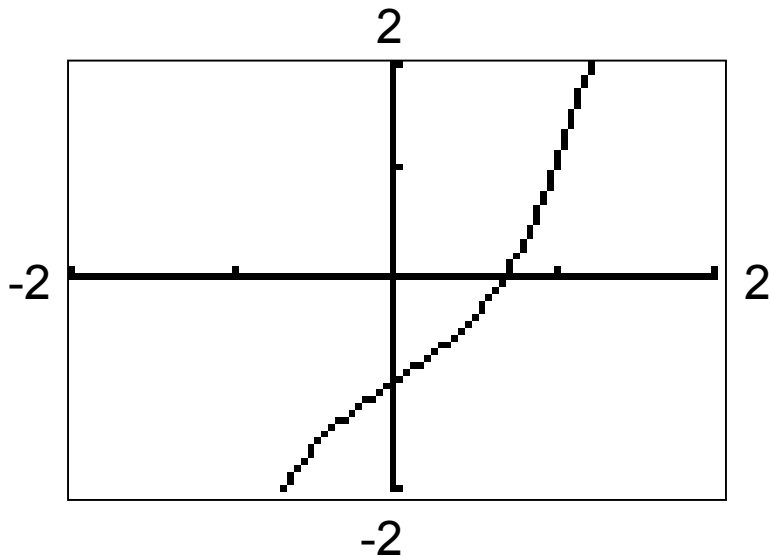
Solving Equations in One Variable Using a Graphing Utility

OBJECTIVE 1

- 1 ✓ **Solve Equations in One Variable Using a Graphing Utility**

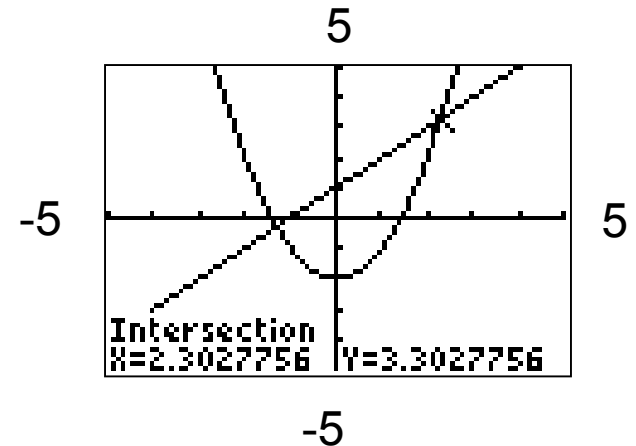
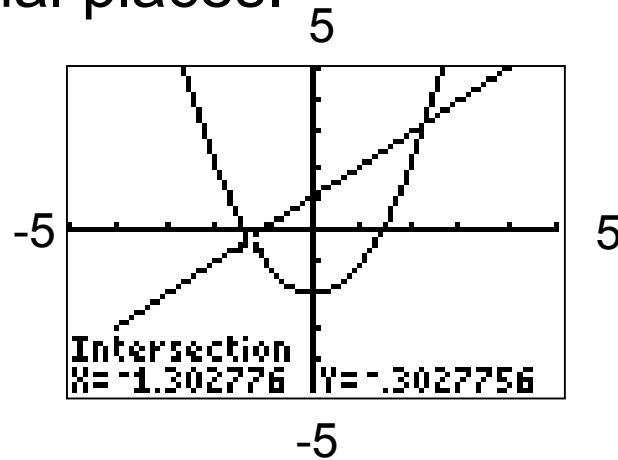
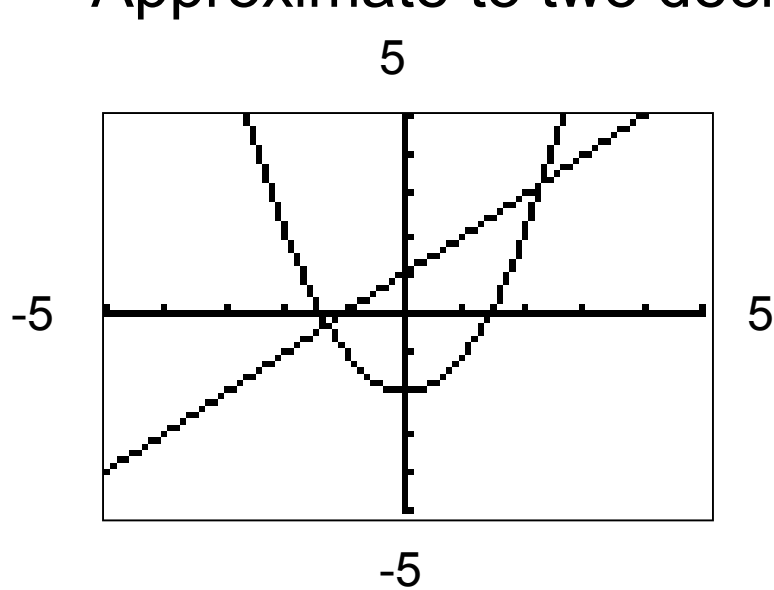
EXAMPLE Using ZERO (or ROOT) to Approximate Solutions of an Equation

Find the solution(s) to the equation $x^3 + x - 1 = 0$.
Approximate to two decimal places.



EXAMPLE Using **INTERSECT** to Approximate Solutions of an Equation

Find the solution(s) to the equation $x^2 - 2 = 3x + 1$.
Approximate to two decimal places.



Steps for Solving Equations Graphically Using ZERO (or ROOT)

STEP 1: Write the equation in the form $\{\text{expression in } x\} = 0$.

STEP 2: Graph $Y_1 = \{\text{expression in } x\}$.

STEP 3: Use ZERO (or ROOT) to determine each x -intercept of the graph.

Steps for Solving Equations Graphically Using INTERSECT

STEP 1: Graph $Y_1 = \{\text{expression in } x \text{ on the left side of the equation}\};$
 $Y_2 = \{\text{expression in } x \text{ on the right side of the equation}\}.$

STEP 2: Use INTERSECT to determine the x -coordinate of each point of intersection.

EXAMPLE

Solving an Equation Algebraically and Graphically

Solve the equation: $2(x-1) = -3(x+2)$

Algebraic Solution

$$x = -\frac{4}{5}$$

Graphing Solution

