



Graphing Calculator Investigation

A Preview of Lesson 3-6

Points of Intersection

Casio Algebra FX 2.0

You can use an Algebra FX 2.0 graphing calculator to determine the points of intersection of a transversal and two parallel lines.

Example

Parallel lines ℓ and m are cut by a transversal t . The equations of ℓ , m , and t are $y = \frac{1}{2}x - 4$, $y = \frac{1}{2}x + 6$, and $y = -2x + 1$, respectively. Use a graphing calculator to determine the points of intersection of t with ℓ and m .

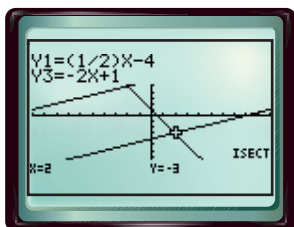
Step 1 Enter the equations in the GRAPH FUNC list and graph in the standard viewing window.

KEYSTROKES: From the main menu, press 3 (\square) 1 (\div) 2 (\square) X,0,T $(-)$ 4 (EXE)
 (\square) 1 (\div) 2 (\square) X,0,T $(+)$ 6 (EXE) (\leftarrow) 2 X,0,T $(+)$ 1 (EXE)
F5

Step 2 Use the G-SLV menu to find the points of intersection.

- Find the intersection of ℓ and t .

KEYSTROKES: **F4** 5 (EXE) (\blacktriangledown) (EXE)

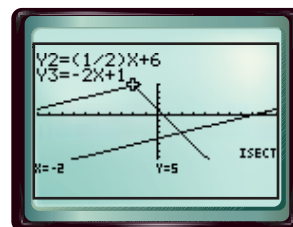


$[-10, 10]$ scl: 1 by $[-10, 10]$ scl: 1

Lines ℓ and t intersect at $(2, -3)$.

- Find the intersection of m and t .

KEYSTROKES: **F4** 5 (\blacktriangledown) (EXE) (EXE)



$[-10, 10]$ scl: 1 by $[-10, 10]$ scl: 1

Lines m and t intersect at $(-2, 5)$.

Exercises

Parallel lines a and b are cut by a transversal t . Use a graphing calculator to determine the points of intersection of t with a and b . Round to the nearest tenth.

1. $a: y = 2x - 10$
 $b: y = 2x - 2$
 $t: y = -\frac{1}{2}x + 4$

2. $a: y = -x - 3$
 $b: y = -x + 5$
 $t: y = x - 6$

3. $a: y = 6$
 $b: y = 0$
 $t: x = -2$

4. $a: y = -3x + 1$
 $b: y = -3x - 3$
 $t: y = \frac{1}{3}x + 8$

5. $a: y = \frac{4}{5}x - 2$
 $b: y = \frac{4}{5}x - 7$
 $t: y = -\frac{5}{4}x$

6. $a: y = -\frac{1}{6}x + \frac{2}{3}$
 $b: y = -\frac{1}{6}x + \frac{5}{12}$
 $t: y = 6x + 2$

