

11-5a

Graphing Calculator Investigation

A Preview of Lesson 11-5

TI-73

What You'll Learn

Use a graphing calculator to graph families of lines.

Families of Linear Graphs

Families of graphs are graphs that are related in some manner. In this investigation, you will study families of linear graphs.

ACTIVITY

Graph $y = -2x + 4$, $y = -2x + 1$, and $y = -2x - 3$.

STEP 1 Clear any existing equations from the Y= list.

Keystrokes: $\boxed{Y=}$ $\boxed{\text{CLEAR}}$

STEP 2 Enter each equation.

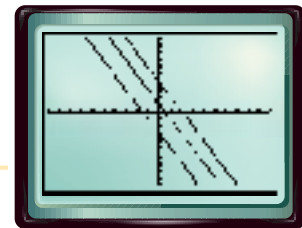
Keystrokes: $\boxed{(-)}$ $\boxed{2}$ \boxed{x} $\boxed{+}$ $\boxed{4}$ $\boxed{\text{ENTER}}$

$\boxed{(-)}$ $\boxed{2}$ \boxed{x} $\boxed{+}$ $\boxed{1}$ $\boxed{\text{ENTER}}$

$\boxed{(-)}$ $\boxed{2}$ \boxed{x} $\boxed{-}$ $\boxed{3}$ $\boxed{\text{ENTER}}$

STEP 3 Graph the equations in the standard viewing window.

Keystrokes: $\boxed{\text{ZOOM}}$ $\boxed{6}$



EXERCISES

1. Compare the three equations.
2. Describe the graphs of the three equations.
3. **MAKE A CONJECTURE** Consider equations of the form $y = ax + b$, where the value of a is the same but the value of b varies. What do you think is true about the graphs of the equations?
4. Use a graphing calculator to graph $y = 2x + 3$, $y = -x + 3$, and $y = -3x + 3$.
5. Compare the three equations you graphed in Exercise 4.
6. Describe the graphs of the three equations you graphed in Exercise 4.
7. **MAKE A CONJECTURE** Consider equations of the form $y = ax + b$, where the value of a changes but the value of b remains the same. What do you think is true about the graphs of the equations?
8. Write equations of three lines whose graphs are a family of graphs. Describe the common characteristic of the graph.



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Graphing Calculator Investigation

A Preview of Lesson 11-5

TI-82

What You'll Learn

Use a graphing calculator to graph families of lines.

Families of Linear Graphs

Families of graphs are graphs that are related in some manner. In this investigation, you will study families of linear graphs.

ACTIVITY

Graph $y = -2x + 4$, $y = -2x + 1$, and $y = -2x - 3$.

STEP 1 Clear any existing equations from the Y= list.

Keystrokes: $\boxed{Y=}$ $\boxed{\text{CLEAR}}$

STEP 2 Enter each equation.

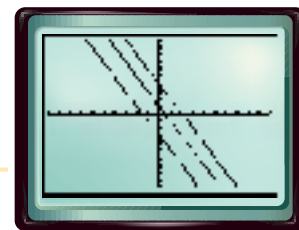
Keystrokes: $\boxed{(-)}$ 2 $\boxed{X,T,\theta}$ $\boxed{+}$ 4 $\boxed{\text{ENTER}}$

$\boxed{(-)}$ 2 $\boxed{X,T,\theta}$ $\boxed{+}$ 1 $\boxed{\text{ENTER}}$

$\boxed{(-)}$ 2 $\boxed{X,T,\theta}$ $\boxed{-}$ 3 $\boxed{\text{ENTER}}$

STEP 3 Graph the equations in the standard viewing window.

Keystrokes: $\boxed{\text{ZOOM}}$ 6



EXERCISES

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Graphing Calculator Investigation

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Casio CFX-9850GB PLUS

What You'll Learn

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ACTIVITY

Graph $y = -2x + 4$, $y = -2x + 1$, and $y = -2x - 3$.

STEP 1 Clear any existing equations from the Y= list.

Keystrokes: From the Main Menu, press 5 **F1** **F2**.

STEP 2 Enter each equation.

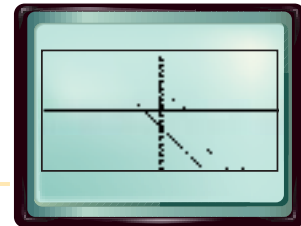
Keystrokes: **(-)** 2 **X,θ,T** **+** 4 **EXE**

(-) 2 **X,θ,T** **+** 1 **EXE**

(-) 2 **X,θ,T** **-** 3 **EXE**

STEP 3 Graph the equations in the standard viewing window.

Keystrokes: **SHIFT** [V-Window]
F3 **EXE** **F6**



EXERCISES

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Graphing Calculator Investigation

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Casio ALGEBRA FX 2.0

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ACTIVITY

Graph $y = -2x + 4$, $y = -2x + 1$, and $y = -2x - 3$.

STEP 1 Clear any existing equations from the Y= list.

Keystrokes: From the Main Menu, press 3 **F2** **EXE**.

STEP 2 Enter each equation.

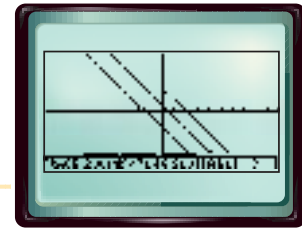
Keystrokes: **(-)** 2 **X,θ,T** **+** 4 **EXE**

(-) 2 **X,θ,T** **+** 1 **EXE**

(-) 2 **X,θ,T** **-** 3 **EXE**

STEP 3 Graph the equations in the standard viewing window.

Keystrokes: **SHIFT** [V-Window]
F3 **ESC** **F5**



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Graphing Calculator Investigation

A Preview of Lesson 11-5

Sharp EL-9600c

What You'll Learn

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ACTIVITY

Graph $y = -2x + 4$, $y = -2x + 1$, and $y = -2x - 3$.

STEP 1 Clear any existing equations from the Y= list.

Keystrokes: $\boxed{Y=}$ \boxed{CL}

STEP 2 Enter each equation.

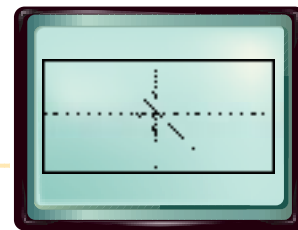
Keystrokes: $\boxed{(-)}$ 2 $\boxed{X/\theta/T/n}$ $\boxed{+}$ 4 \boxed{ENTER}

$\boxed{(-)}$ 2 $\boxed{X/\theta/T/n}$ $\boxed{+}$ 1 \boxed{ENTER}

$\boxed{(-)}$ 2 $\boxed{X/\theta/T/n}$ $\boxed{-}$ 3 \boxed{ENTER}

STEP 3 Graph the equations in the standard viewing window.

Keystrokes: \boxed{ZOOM} 5



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Graphing Calculator Investigation

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Sharp EL-9900

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ACTIVITY

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STEP 1 Clear any existing equations from the Y= list.

Keystrokes: $\boxed{Y=}$ \boxed{CL}

STEP 2 Enter each equation.

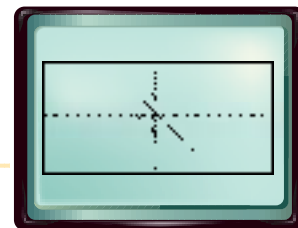
Keystrokes: $\boxed{(-)}$ 2 $\boxed{X/\theta/T/n}$ $\boxed{+}$ 4 \boxed{ENTER}

$\boxed{(-)}$ 2 $\boxed{X/\theta/T/n}$ $\boxed{+}$ 1 \boxed{ENTER}

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STEP 3 Graph the equations in the standard viewing window.

Keystrokes: \boxed{ZOOM} 5



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