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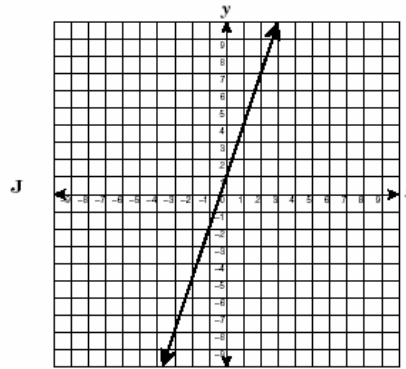
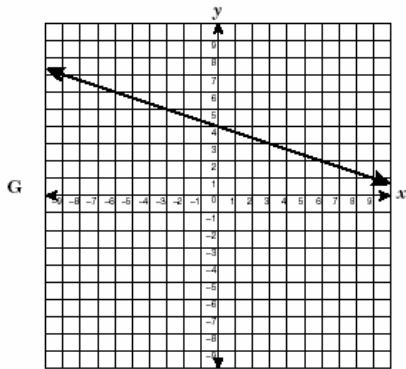
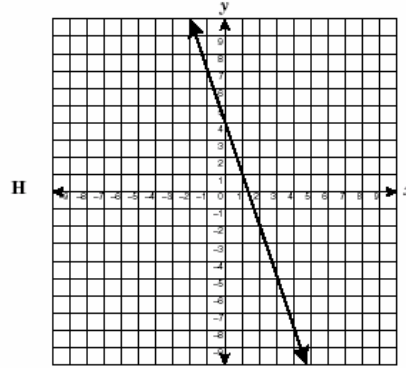
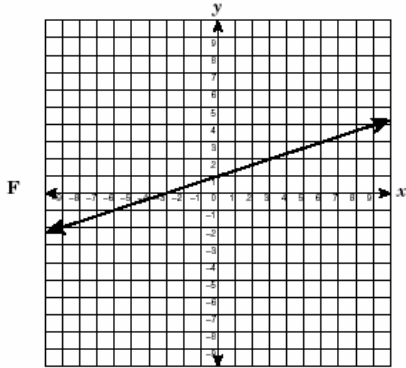
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### Parallel or Perpendicular? How Can You Tell?

How can a student be sure when lines are parallel or perpendicular to a given graph using the graphing calculator?

Look at the following problem.

Which graph best represents a line parallel to the line with the equation  $y=3x+4$ ?



Enter the equation into the equation editor ( $y=$  ) on your graphing calculator and place the calculator beside each of the answer choices. Which appears to be parallel?

What is the shape of the screen of your calculator?

What is the shape of the graphs in the answer choices?

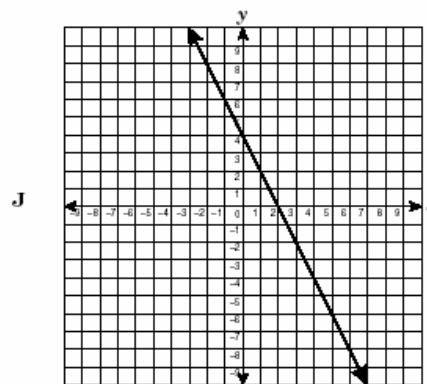
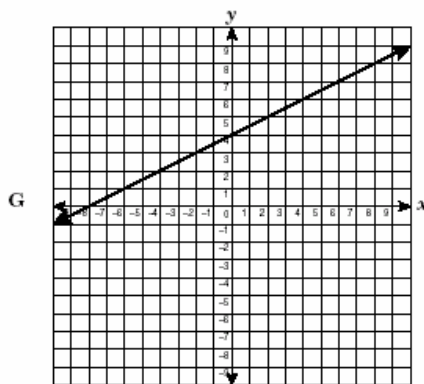
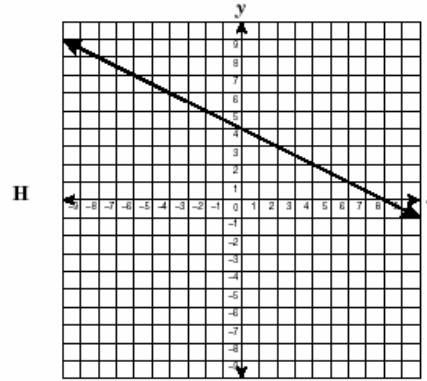
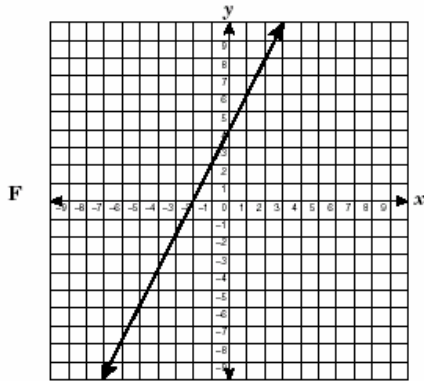
How can you change the graph in the calculator so they match?

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What happens if you are looking for perpendicular lines? Look at the following questions.

36 Which graph best represents the line passing through the point  $(0, 4)$  and perpendicular to  $y = -\frac{1}{2}x$ ?



Enter the given equation into the equation editor ( $y=$  ) on your graphing calculator, graph in a standard viewing window and place the calculator beside each of the answer choices. Which appears to be perpendicular to the graph of the given equation?

What is the shape of the screen of your calculator?

What is the shape of the graphs in the answer choices?

How can you change the graph in the calculator so they match?

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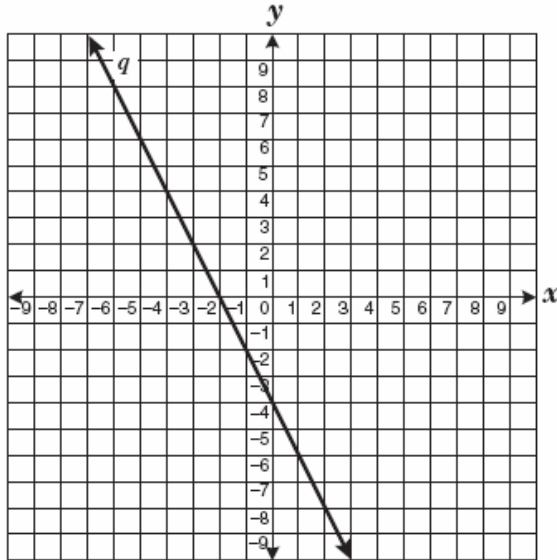
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Is the slope of the line given below positive or negative? \_\_\_\_\_

What do you know about how this value appears in the equation? \_\_\_\_\_

Do you know anything about other values in the equation? \_\_\_\_\_

57 Line  $q$  is shown below.



Which equation best represents a line parallel to line  $q$ ?

A  $y = -\frac{1}{2}x + 4$

B  $y = \frac{1}{2}x - 3$

C  $y = 2x - 5$

D  $y = -2x + 1$

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What is the slope of the equation given below and what is the y-intercept? \_\_\_\_\_

Which graph is the correct answer? \_\_\_\_\_

15 Which of the following is a graph of  $y = -\frac{2}{3}x + 3$ ?

