High School Math TEKS Focus
Objective Three

Algebra (c1A)

Determine whether or not given situations can be represented by linear function

No Test Items Available

Algebra (c1C))

Translate among and use algebraic, tabular, graphical, or verbal descriptions of linear functions

41 A math club decided to buy T-shirts for its members. A clothing company quoted the following prices for the T-shirts.

Math Club T-Shirts

Number of T-Shirts	Total Cost (dollars)
10	75
15	105
20	135

Which equation best describes the relationship between the total cost, c, and the number of T-shirts, s?

A $c = 6.75s$

B $c = 7.00s$

C $c = 2s - 20$

D $c = 15 + 6s$

9th Grade 2003

13 Which function includes the data set $\{(2, 4), (6, 6), (12, 9)\}$?

A $y = 2x$

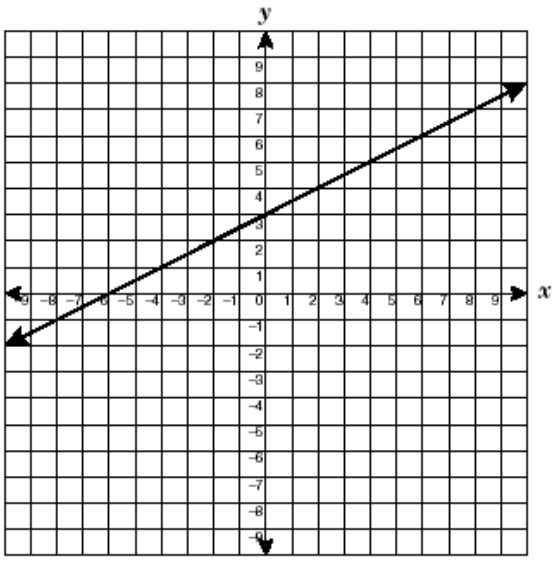
B $y = \frac{x}{2}$

C $y = 2x - 9$

D $y = \frac{x}{2} + 3$

9th Grade 2004

49 Which linear function best describes the graph shown below?



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

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

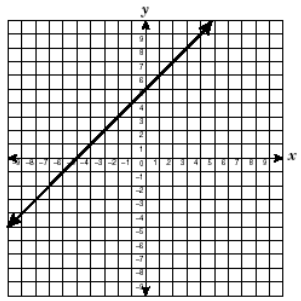
C $y = -3x - \frac{1}{2}$

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

10th Grade 2003

52 Which graph best represents the function $y = -1.75x + 5$?

F



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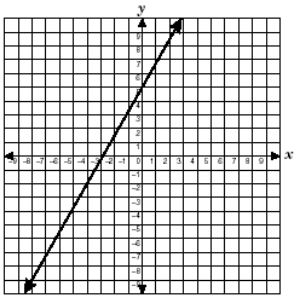

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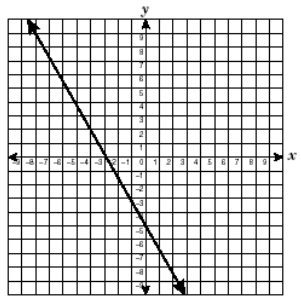

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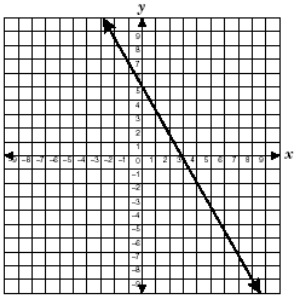


10th Grade 2004

16 The algebraic form of a linear function is $d = \frac{1}{4}l$, where d is the distance in miles and l is the number of laps. Which of the following choices identifies the same linear function?

F For every 4 laps on the track, an athlete runs 1 mile.

G For every lap on the track, an athlete runs $\frac{1}{8}$ mile.

H

l	*d*
0	0
2	$\frac{1}{2}$
4	$\frac{1}{4}$

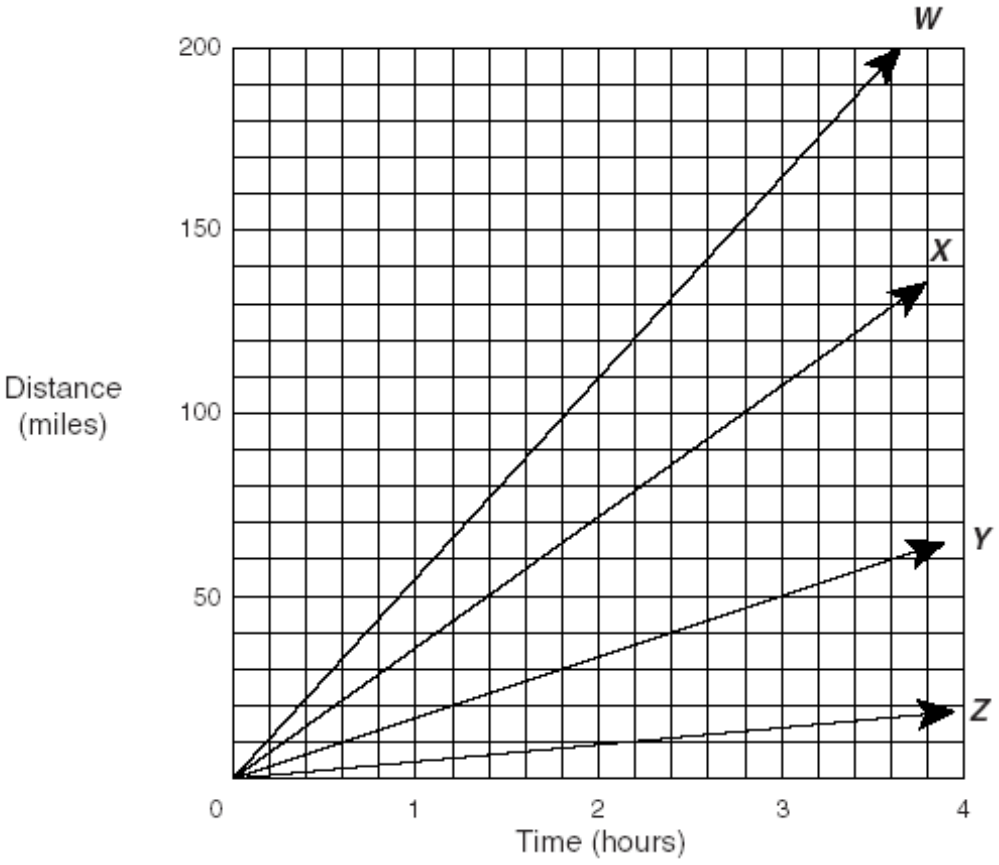
J

l	*d*
$\frac{1}{4}$	1
1	4
4	16

11th Grade 2003

Algebra (c2A))
Develop the concept of slope as rate of change & determine slopes from graphs, tables, and algebraic representations

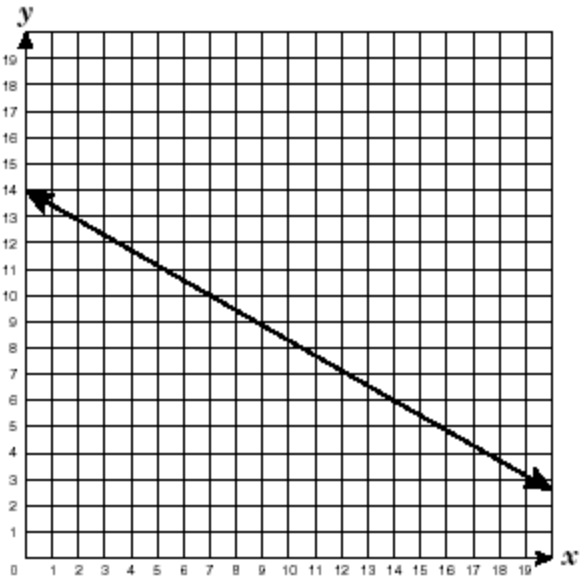
39 In the distance formula $d = rt$, r represents the rate of change, or slope. Which ray on the graph best represents a slope of 55 mph?



A W
B X
C Y
D Z

9th Grade 2003

19 What is the slope of the linear function shown in the graph?



A $-\frac{7}{4}$

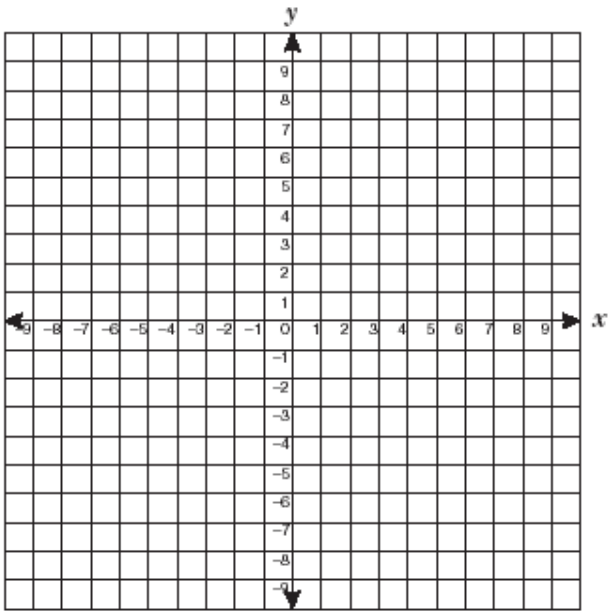
B $-\frac{4}{7}$

C $\frac{4}{7}$

D $\frac{7}{4}$

9th Grade 2004

46 What is m, the slope of the line that contains the points $(2, 0)$, $(0, 3)$, and $(4, -3)$?



F $m = \frac{3}{2}$

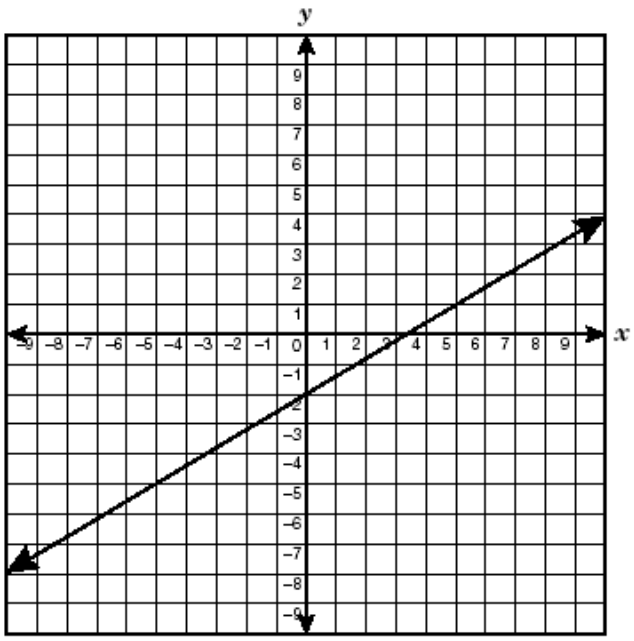
G $m = \frac{2}{3}$

H $m = -\frac{2}{3}$

J $m = -\frac{3}{2}$

10th Grade 2003

26 What is the rate of change of the graph below?



F 3.5

G 1.67

H 0.6

J -1.67

10th Grade 2004

57 What is the slope of the line identified by $2y = -3(x - 2)$?

A -3

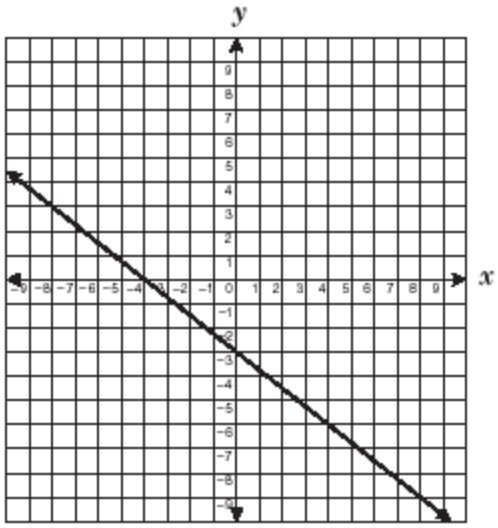
B $-\frac{3}{2}$

C $\frac{2}{3}$

D 2

11th Grade 2003

13 What are the slope and y-intercept of the equation of the line graphed below?



A $m = -\frac{3}{4}$

$b = -4$

B $m = -\frac{4}{3}$

$b = -4$

C $m = -\frac{4}{3}$

$b = -3$

D $m = -\frac{3}{4}$

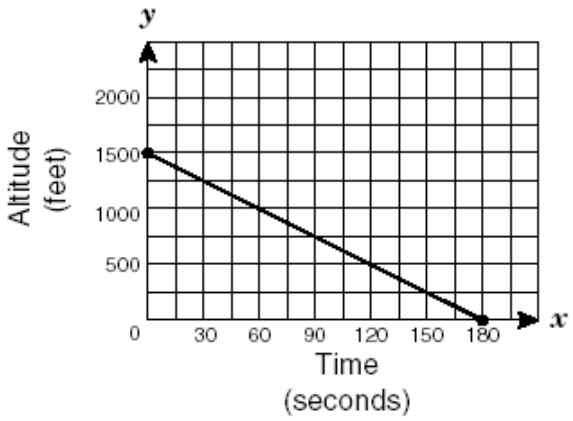
$b = -3$

11th Grade 2004

Algebra (c2B)

Interpret the meaning of slope and intercepts in situations using data, symbolic representations, or graphs

34 The line segment on the graph shows the altitude of a landing airplane from the time its wheels are lowered to the time it touches the ground. Which of the following best describes the slope of the line segment?



F The plane descends about 1 foot per 8 seconds.

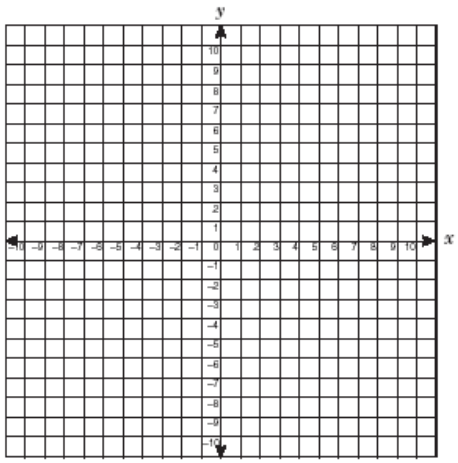
G The plane descends about 8 feet per second.

H The plane descends about 1 foot per 2 seconds.

J The plane descends about 2 feet per second.

9th Grade 2004

43 What are the slope and y-intercept of a line that contains the point $(5, -1)$ and has the same y-intercept as $x - 3y = 6$?



A $m = \frac{1}{3}$
$b = 6$

B $m = 5$
$b = -2$

C $m = \frac{1}{5}$
$b = -2$

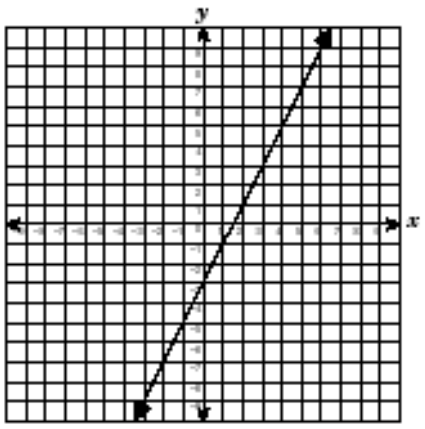
D $m = 3$
$b = 6$

11th Grade 2003

Algebra (c2C))

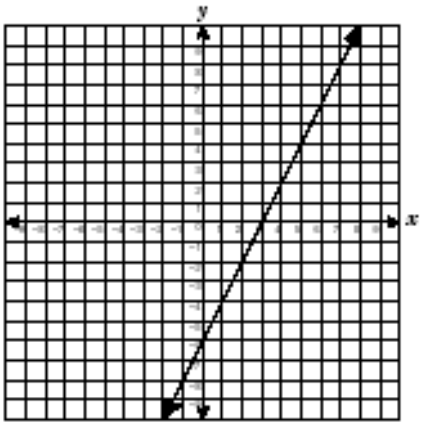
Investigate, describe, and predict the effects of changes in "m" & "b" on the graph of y=mx+b

18 The graph of a line that contains the points (–1, –5) and (4, 5) is shown below.



Which best represents this line if the slope is doubled and the y-intercept remains constant?

F



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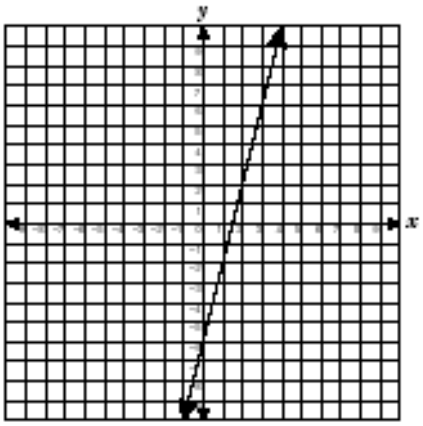

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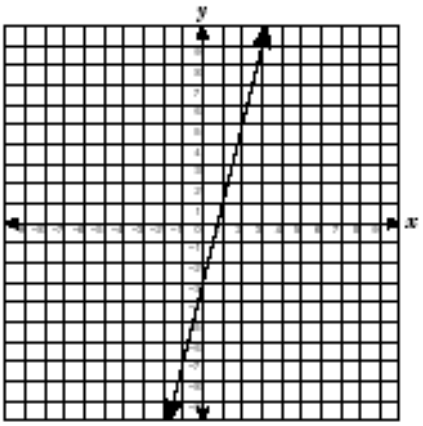
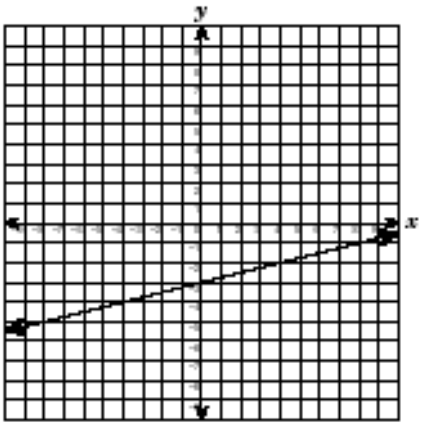
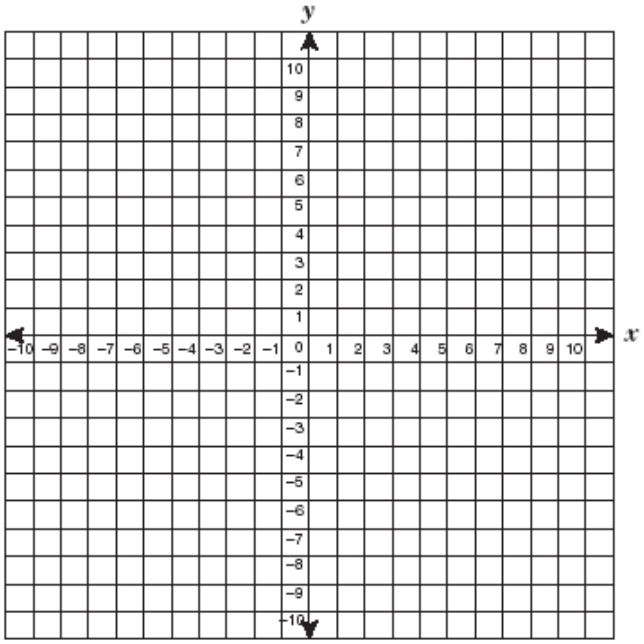


J



9th Grade 2003

24 Which best describes the effect on the graph of $f(x) = 4x + 8$ if the y-intercept is changed to -3?



F The slope decreases.

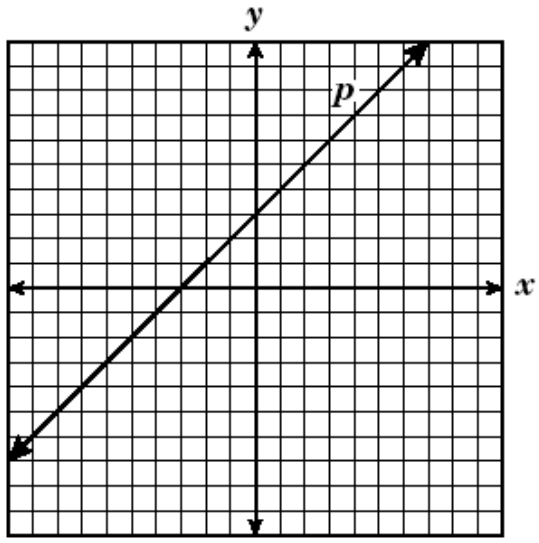
G The new line passes through the origin.

H The x-intercept increases.

J The y-intercept increases.

10th Grade 2003

8 What will happen to the slope of line p if the line is shifted so that the y-intercept increases and the x-intercept remains the same?



F The slope will change from positive to negative.

G The slope will change from negative to positive.

H The slope will increase.

J The slope will decrease.

10th Grade 2004

29 Given the function $y = 3.54x - 54.68$, which statement best describes the effect of increasing the y-intercept by 33.14?

A The new line is parallel to the original.

B The new line has a greater rate of change.

C The x-intercept increases.

D The y-intercept decreases.

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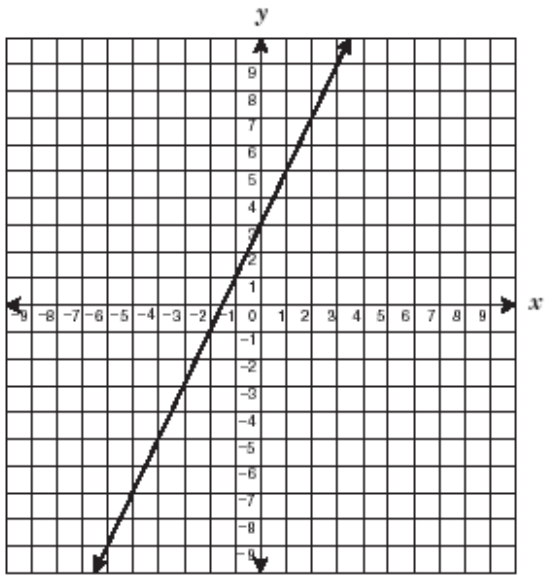
17 The graph of a line is shown below.



If the slope of this line is multiplied by -1 and the y-intercept decreases by 2 units, which linear equation represents these changes?

A $y = -2x + 1$

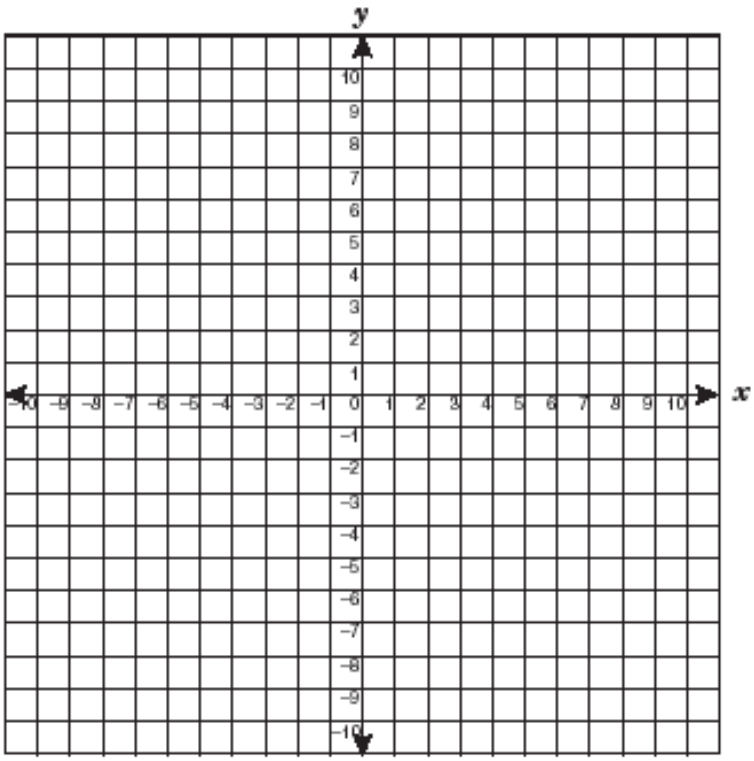
B $y = -x + 1$

C $y = -x - 1$

D $y = -\frac{1}{2}x - 1$ 11th Grade 2004

Algebra (c2D)
Graph and write equations of lines given characteristics such as two points, a point and a slope, or a slope and y-intercept

44 Which linear function includes the points (–3, 1) and (–2, 4)?



F $f(x) = 3x + 10$

G $f(x) = \frac{1}{3}x + 2$

H $f(x) = 3x - 6$

J $f(x) = -3x + 1$

9th Grade 2003

10 Which equation describes a line that has a y-intercept of 5 and a slope of $\frac{1}{2}$?

F $y = 5 + \frac{1}{2}x$

G $y = (5 + x)\frac{1}{2}$

H $y = 5x + \frac{1}{2}$

J $y = (5x + 1)\frac{1}{2}$

9th grade 2003

9 Which of the following describes the line containing the points (0, 4) and (3, −2)?

A $y = -2x + 4$

B $y = \frac{1}{2}x + 6$

C $y = 2x + 4$

D $y = -\frac{1}{2}x + 6$

10th Grade 2003

44 Which equation describes the line that passes through the point (4, 7) and is parallel to the line represented by the equation $-3x + y = 4$?

F $y = -3x + 19$

G $y = 3x - 5$

H $y = \frac{1}{3}x + 5\frac{2}{3}$

J $y = -\frac{1}{3}x + 8\frac{1}{3}$

10th Grade 2004

44 Which equation represents the line that passes through the points (−1, 4) and (3, 2)?

F $y = -\frac{1}{2}x + \frac{7}{2}$

G $y = -\frac{1}{2}x + \frac{9}{2}$

H $y = -2x + 7$

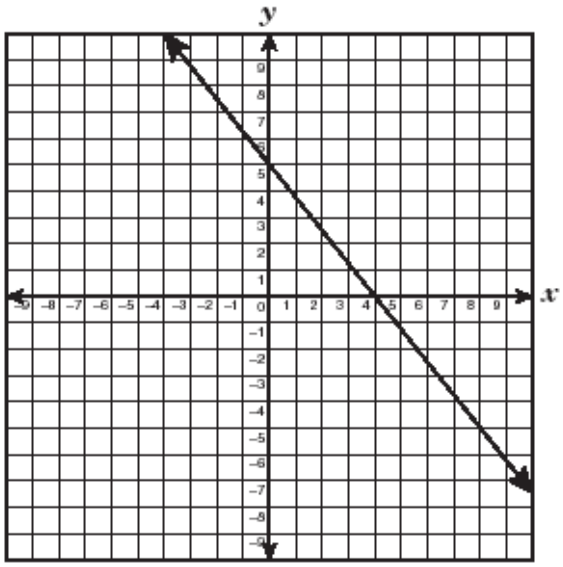
J $y = -2x + 3$

11th Grade 2004

Algebra (c2E)

Determine the intercepts of linear functions from graphs, tables, and algebraic representations

42 What are the x- and y-intercepts of the function graphed below?



F (4, 0) and (5, 0)

G (4, 0) and (0, 5)

H (0, 4) and (5, 0)

J (0, 4) and (0, 5)

9th Grade 2004

26 What is the y-intercept of the function $f(x) = 3(x - 2)$?

F 3

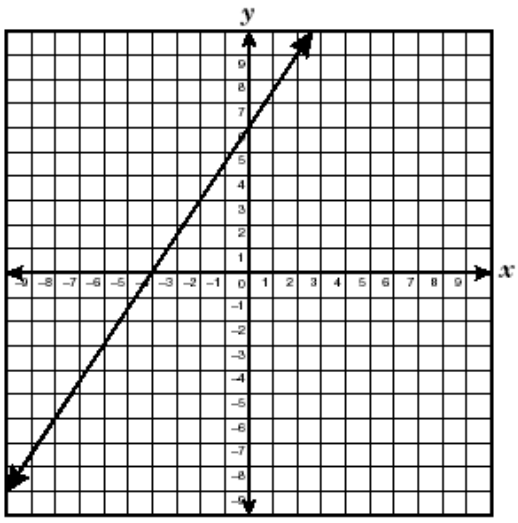
G 1

H -2

J -6

10th Grade 2004

6 Which coordinate points represent the x- and y-intercepts of the graph shown below?



F $(0, -4)$ and $(6, 0)$

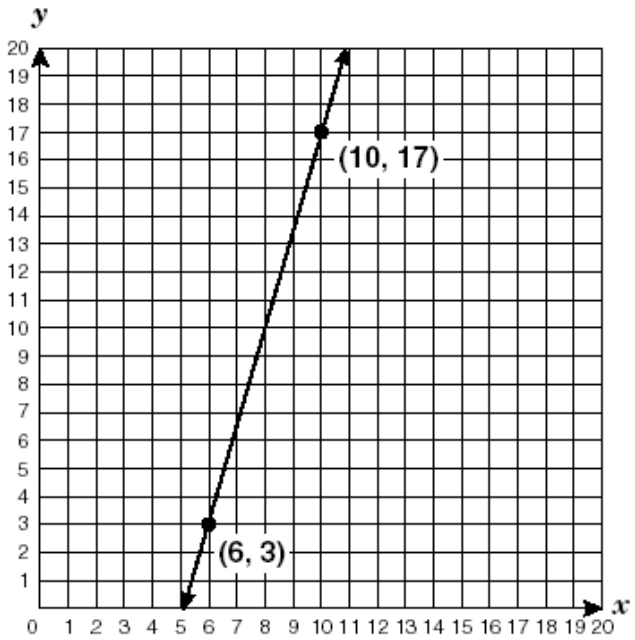
G $(-4, 0)$ and $(0, 6)$

H $(6, 0)$ and $(-4, 0)$

J $(0, 6)$ and $(0, -4)$

10th Grade 2004

53 What is the y-intercept of the function graphed below?



A -24

B -21

C -18

D -9

11th Grade 2003

8 What are the coordinates of the x-intercept of the equation $-3y = 8 - 2x$?

F $(-2, 0)$

G $(0, -\frac{8}{3})$

H $(\frac{2}{3}, 0)$

J $(4, 0)$

11th Grade 2004

Algebra (c2F
Investigate, describe, and predict the effects of interpret and predict the effects of changing slope and the y-intercept in applied situations

No Test Items Available

Algebra (c2G)
Relate direct variation to linear functions and solve problems involving proportional change

2 On a certain day the exchange rate of Mexican pesos for U.S. dollars was approximately 10 pesos for 1 dollar. If an exchange of 4,000 pesos was made that day, what was the approximate value of the exchange in dollars?

F $40
G $400
H $4,000
J $40,000

9th Grade 2003

45 Matt is a speed skater. His coach recorded the following data during a timed practice period.

Time (seconds)	Distance (meters)
4.50	50
9.00	100
11.25	125

If Matt continues to skate at the rate shown in the table, what is the approximate distance in meters he will skate in 25 seconds?

A 250 m
B 175 m
C 150 m
D 278 m

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