

Spiraling Practice

Which function is equivalent to $f(x) = -4(x + 7)^2 - 6$?

F $f(x) = -4x^2 - 56x - 202$

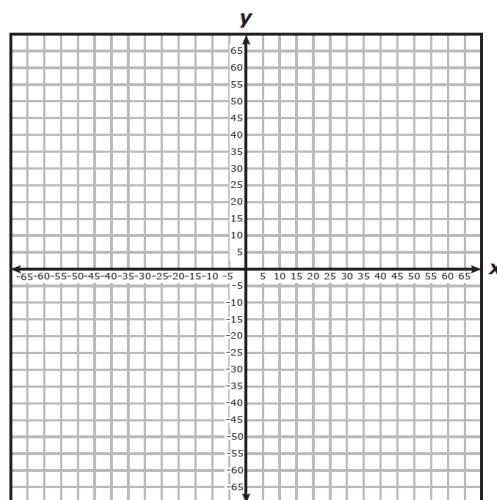
G $f(x) = -4x^2 + 14x + 43$

H $f(x) = -4x^2 - 56x - 172$

J $f(x) = -4x^2 + 190$

A paper airplane was thrown from the top of a tall building. The height of the paper airplane above the ground can be found using the function $y = -1.5x + 60$, where x is the time in seconds the airplane has been in the air.

How many seconds did it take the paper airplane to reach the ground?



Which expression is equivalent to $\frac{(q^5)^{-3}}{q^{-15}}$ for all values of q where the expression is defined?

F q^{30}

G $\frac{1}{q^{30}}$

H q^0

J $\frac{1}{q^0}$

The equation $y = ax^2 + bx + c$ is graphed in the standard (x, y) coordinate plane for real values of a , b , and c . When $y = 0$, which of the following best describes the solutions for x ?

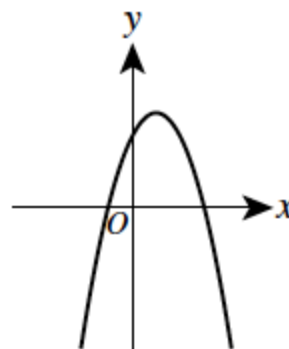
F. 2 distinct positive real solutions

G. 2 distinct negative real solutions

H. 1 positive real solution and 1 negative real solution

J. 2 real solutions that are not distinct

K. 2 distinct solutions that are not real



What is the solution set for $-4x + 7 \geq 8x + 55$?

F $x \geq 4$

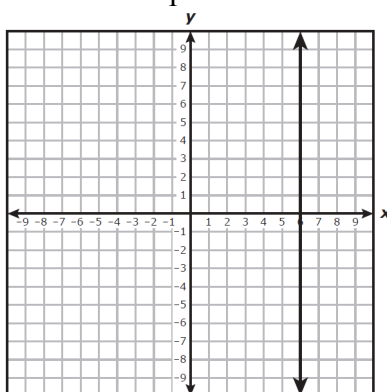
G $x \geq 45$

H $x \leq -4$

J $x \leq -45$

What is the solution to $32x + 95 = 3(12x + 7)$?

What is the equation and slope of the line shown on the grid?



F $y = 6$; slope is $-\frac{1}{6}$.

G $x = 6$; slope is zero.

H $y = 6$; slope is 6.

J $x = 6$; slope is undefined.

In the year 1900, the total number of metric tons of copper produced in the world was 485,000. Each year since 1900, the total number of metric tons of copper produced has increased on average by about 4.25% over the amount produced the previous year. Which function models the total number of metric tons of copper produced in the year that is x years since 1900?

A $c(x) = 485,000(1.0425)^x$

B $c(x) = 485,000x^{1.0425}$

C $c(x) = 485,000(0.9575)^x$

D $c(x) = 485,000x^{0.9575}$

Which expression is a factor of $21x^2 + 13x - 20$?

A $3x - 4$

B $7x - 5$

C $7x + 4$

D $3x + 5$