Simplify:
$(4x + 3) + (-6x - 2)$

Simplify:
$(5x^2 - 3xy + 9y^2) - (-4x^2 + 2xy + 3y^2)$

Expand, then simplify:
$3(4x^4 - x^3) - 5(x^4 - 2x^3)$

Expand, then simplify:
$-2(-7x^2 - 3x + 5) + 3(x^2 + 2x - 3)$

$3 + 4m = 15 - 2m$

$4b + 5 = 1 + 5b$

$16 - 2r = 3r + 1$

$3(x - 2) = 21$

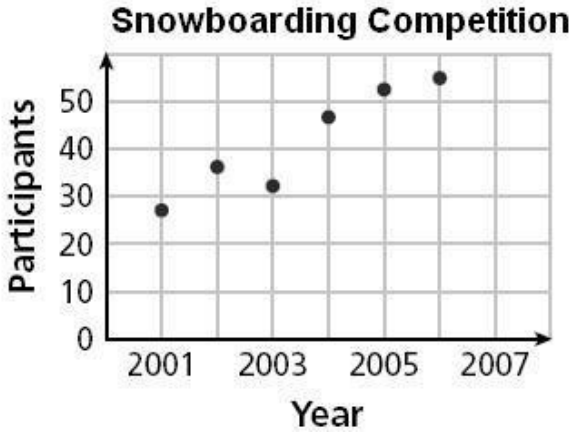
$2(x - 3) = 10$

$-4(9 - 3x) = 48$

Find the *root* of the equation:

$3(x + 2) – 4(x – 5) = 18$

The graph below shows information a student's grade and the number of hours spent working on a cycle.



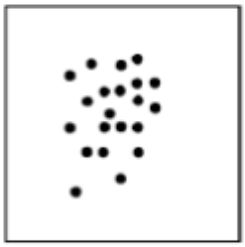
b) Describe the correlation shown on the graph.

c) Use words to describe the relationship shown on the graph.

d) Use your line of best fit to determine the number of participants in the year 2004.

e) Explain whether you used interpolation or extrapolation to answer "d".

Describe the correlation in each



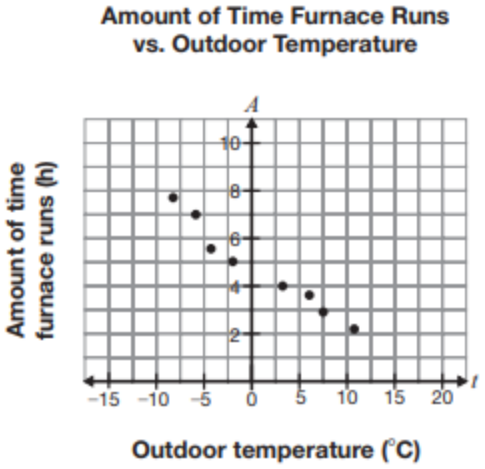
Collect like terms

$(-6x^2 - 14x + 8) + (3x^2 + 5x + 6x^2)$

$(-2x^2 + 9x^2 - 11x^2) - (-5x^2 + 2 + 10x)$

$(4x^2 + 4x - 5) - (-14x^2 + 4 + 1)$

4 One winter, Cassy records the total amount of time, A, in hours, that her furnace runs in a day versus the outdoor temperature, t, in degrees Celsius. She produces this scatter plot.



Cassy then decides to improve the insulation in her home, which will save energy and reduce the amount of time her furnace runs.

Which point could Cassy expect to record **after** improving the insulation in her home?

a $(-5, 10)$

b $(0, 5)$

c $(5, 2)$

d $(10, 5)$

3 Which of the following is a simplified form of

$$(-2m + 3) - (5m - 6)?$$

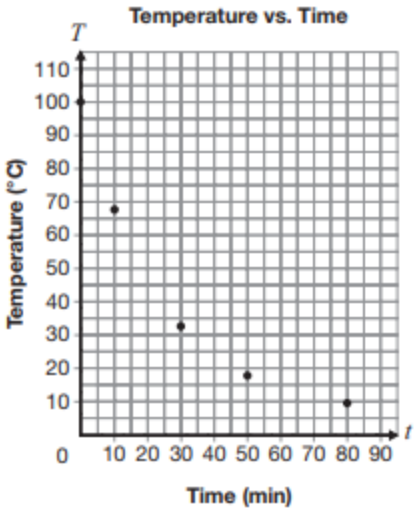
a $3m - 3$

b $3m + 9$

c $-7m - 3$

d $-7m + 9$

5 A pot of hot soup is placed in a refrigerator to cool. Information about the temperature of the soup at five different times is shown.



Which statement below is true based on the overall trend in the data?

a At 90 minutes, the temperature of the soup will be 0 °C.

b The temperature of the soup decreases at a constant rate.

c It takes approximately 18 minutes for the soup to cool to half its original temperature.

d There is a greater decrease in temperature between 50 and 80 minutes than between 10 and 30 minutes.

Walking Around the Park

A park in the shape of a rectangle is pictured with algebraic expressions representing its length and width, in metres.

The perimeter of the park, P, can be determined using the equation

$$P = 2l + 2w.$$

Determine an equation to represent the perimeter of the park using the given sides.

$P =$ _____

The perimeter of the park is 350 m.

Determine the length of the park. Show your work.

4 Which of the following is equivalent to

$$3(5x - 1) - 2(3x + 5)?$$

a $9x - 13$

b $9x + 4$

c $21x - 13$

d $21x + 4$