Structure in Expressions - Worksheet 4 Answer Key

Find the zeros of the following mathematical expressions:

1.
$$(x-2)(x+7)$$
.
 $x = 2, -7$.

2.
$$(3x - 5)(7x + 2)$$
.
 $x = \frac{5}{3}, -\frac{2}{7}$.

3.
$$x^2 - 7x + 10$$
. $x = 5, 2$.

4.
$$3x^2 + 12x + 12$$
. $x = -2, -2$.

5.
$$2x^2 - 9x + 10$$
. $x = \frac{5}{2}, 2$.

6.
$$x^3 + 5x^2 - 6x$$
.
 $x = -6, 0, 1$.

7.
$$x^5 - 25x^3 + 144x$$
.
 $x = -4, -3, 0, 3, 4$.

Solve the following problems:

- 8. A gardener has 50 feet of fencing and wants to use all of it to fence in a rectangular plot with area 100 square feet. What should the dimensions of the fenced in area be?

 5 and 20 feet.
- 9. Is the vertex of $y = x^2 + 3x + 2$ a minimum or a maximum? What are the coordinates of the vertex? The vertex $\left(-\frac{3}{2}, -\frac{1}{2}\right)$ is a minimum.
- 10. Does the quadratic $y = -x^2 5x + 6$ have a minimum or a maximum? What are the coordinates of the vertex? The vertex $\left(-\frac{5}{2}, \frac{49}{4}\right)$ is a maximum.

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