Unit 3 Math 3 Extra Practice for Lessons One and Two

- 1. Given a polynomial $y = 46x^3 x^2 + 6x 7$,
 - a) What is the degree?
 - b) How many terms?
 - c) What is the constant?
 - d) What is the coefficient of the 2nd term?

2. Given the equation $y = a(x + 4)^2 - 7$, find the value of "a" if the function goes through the point (44, 1529).

3. A parabola goes through the points (9, 0), (8, 80) and (-2, 0). Find the equation of the parabola in all three forms.

4. A quadratic function has a vertex at (-3, 10) and goes through the point (7, 210). Find the general form equation of the function.

5. A parabola has an equation of $y = \frac{7}{8}(x-3)^2 + 3$. Find the focus, vertex, and directrix for this parabola.

6. An outdoor cooker is used to warm some baked beans on a recent camping trip. The cooker has a parabolic dish that is 100 inches wide and 30 inches deep. Where should the food be placed to maximize the most heat from the sun's rays?

Answers

Extra Practice for Lessons One and Two

- 1. Given a polynomial $y = 46x^3 x^2 + 6x 7$,
 - e) What is the degree? 3
 - f) How many terms? 4
 - g) What is the constant? -7
 - h) What is the coefficient of the 2nd term? -1

2. Given the equation $y = a(x + 4)^2 - 7$, find the value of "a" if the function goes through the point (44, 1529). 2/3

3. A parabola goes through the points (9, 0), (8, 80) and (-2, 0). Find the equation of the parabola in all three forms.

y = -8(x - 9)(x + 2), $y = -8x^{2} + 56x + 144,$

 $y = -8(x - 3.5)^2 + 242$

4. A quadratic function has a vertex at (-3, 10) and goes through the point (7, 210). Find the general form equation of the function.

 $y = 2x^2 + 12x + 28$

5. A parabola has an equation of $y = \frac{7}{8}(x-3)^2 + 3$. Find the focus, vertex, and directrix for this parabola.

Vertex: (3, 3) Focus: (3,
$$3\frac{4}{7}$$
) Directrix: $y = 2\frac{3}{7}$

6. An outdoor cooker is used to warm some baked beans on a recent camping trip. The cooker has a parabolic dish that is 100 inches wide and 30 inches deep. Where should the food be placed to maximize the most heat from the sun's rays?

20.83 units above the vertex along the axis of symmetry.