

Graded Homework 6

Factor the following equations (if possible): (see section 6.1, 6.2, 6.3 on factoring)

1. $x^2 + 10x + 25$

2. $5x^2 - 45$

3. $27t^3 - 3t$

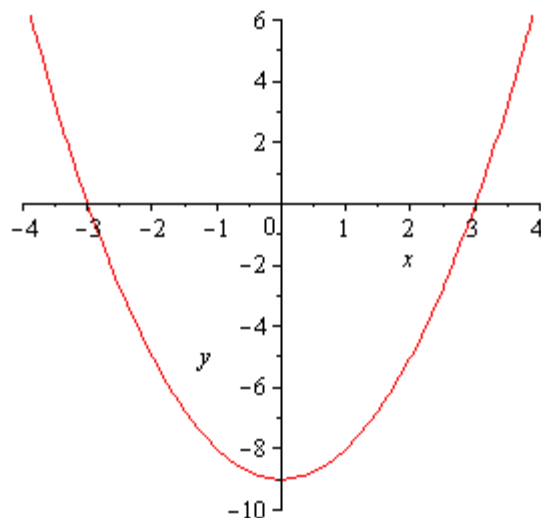
4. $5x^3 - 80x$

5. $9 - x^8$

6. $54x^3y - 250y^4$

7. Compared to the graph of $y = x^2$, the graph of $y = \underline{\hspace{2cm}}$ is shifted upward 2 units.
8. Compared to the graph of $y = x^2$, the graph of $y = \underline{\hspace{2cm}}$ is shifted to the right 2 units.
9. The graph of $y = -x^2$ is a parabola opening .
10. A parabola whose equation is represented by $y = ax^2 + c$ goes through the two points (0, 1) and (1, 3). What are the values of a and c ?

Consider graph of the parabola $y = ax^2 + bx + c$ shown below:



Use the graph to find: (see section 11.5, example 1)

11. All values of x such that $y = 0$.
12. All values of x such that $y > 0$.
13. all values of x such that $y < 0$.
14. Graph the parabola $y = f(x) = x^2 - 9$ and shade the region in the xy plane where $y > 0$.
15. Solve the quadratic inequality by any means: $x^2 + 4x + 3 < 0$.