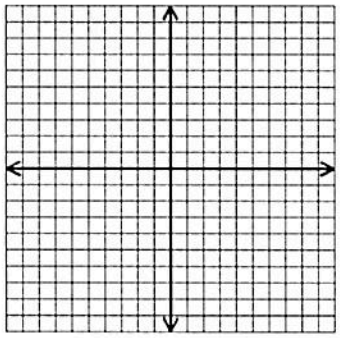
Name:_____ Date:_____

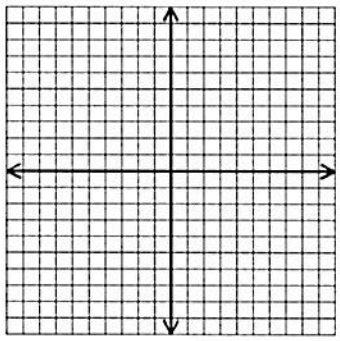
PC: Transformations of Functions Ms. Loughran

Do Now Activity

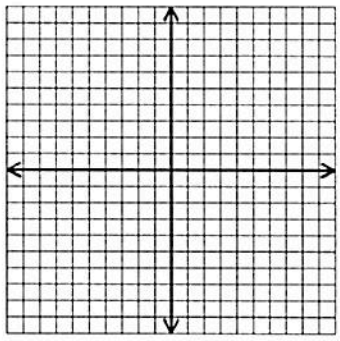
1. Graph $y = x^2$.



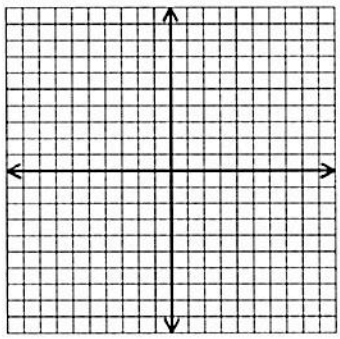
2. Graph $y = (x+4)^2$ and describe how it is related to $y = x^2$.



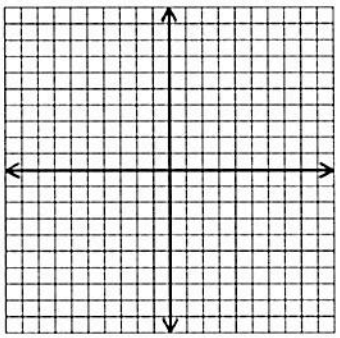
3. Graph $y = (x-2)^2$ and describe how it is related to $y = x^2$.



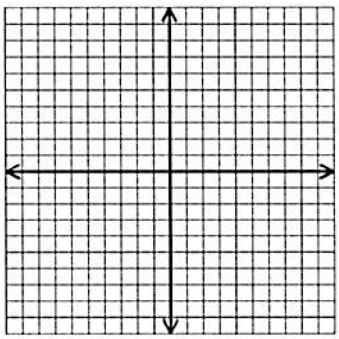
4. Graph $y = x^2 + 4$ and describe how it is related to $y = x^2$.



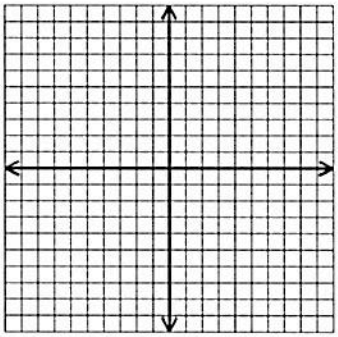
5. Graph $y = x^2 - 2$ and describe how it is related to $y = x^2$.



6. Graph $y = -x^2$ and describe how it is related to $y = x^2$.



7. **Graph $y = (-x)^2$ and describe how it is related to $y = x^2$.**



Use what you have discovered in questions 1 – 7 to fill in the following blanks:

- $f(x) + a$ **is** $f(x)$ **shifted** _____ a **units**
- $f(x) - a$ **is** $f(x)$ **shifted** _____ a **units**
- $f(x + a)$ **is** $f(x)$ **shifted** _____ a **units**
- $f(x - a)$ **is** $f(x)$ **shifted** _____ a **units**
- $-f(x)$ **is** $f(x)$ **reflected over the** _____
- $f(-x)$ **is** $f(x)$ **reflected over the** _____