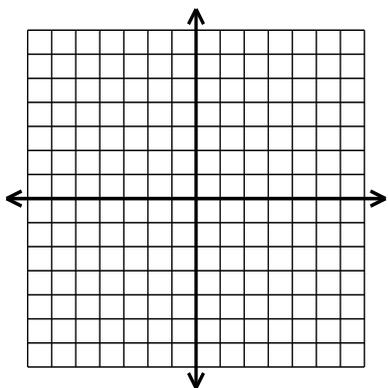


## Transformations of Functions

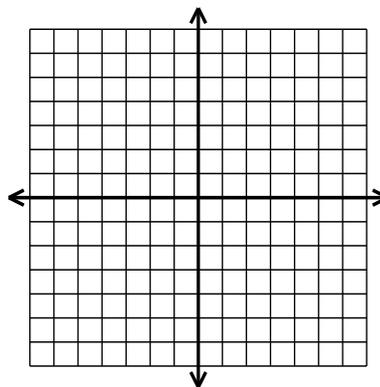
FOR THESE ONLY CONCENTRATE ON GRAPHING AND FINDING (a) Vertical Shift, (b) Horizontal Shift, (c) Compression/Stretch

### Square

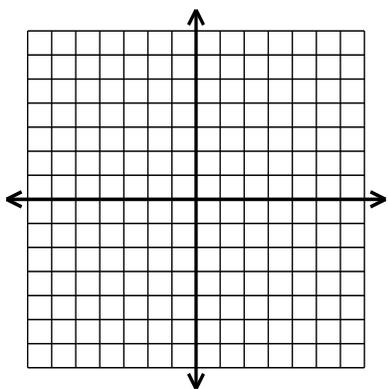
1.  $f(x) = x^2$



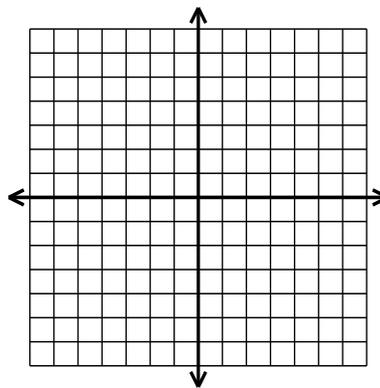
2.  $f(x) = x^2 + 2$



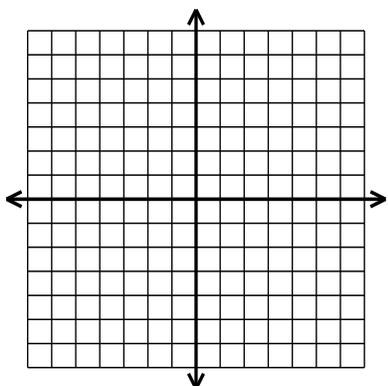
3.  $f(x) = x^2 - 2$



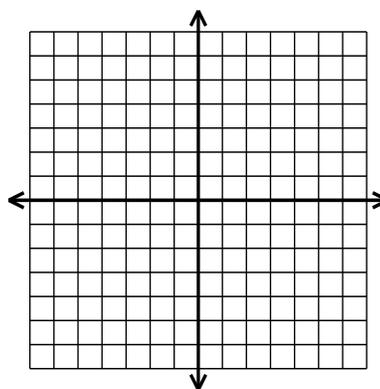
4.  $f(x) = (x+2)^2$



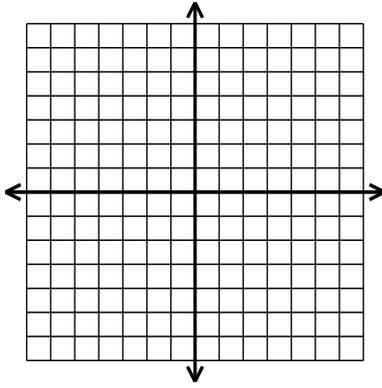
5.  $f(x) = (x-2)^2$



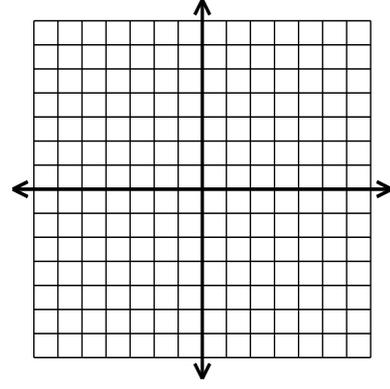
6.  $f(x) = -x^2$



7.  $f(x) = 2x^2$

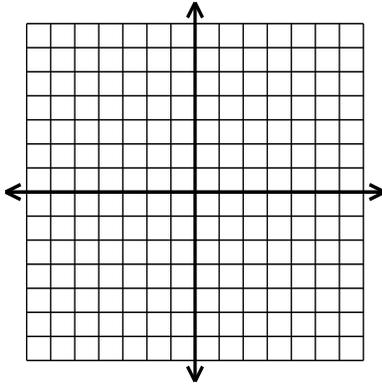


8.  $f(x) = \frac{1}{2}x^2$

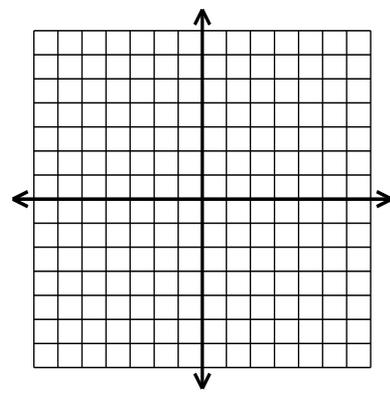


**Absolute Value**

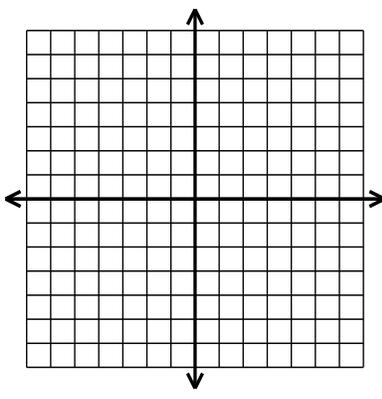
9.  $f(x) = |x|$



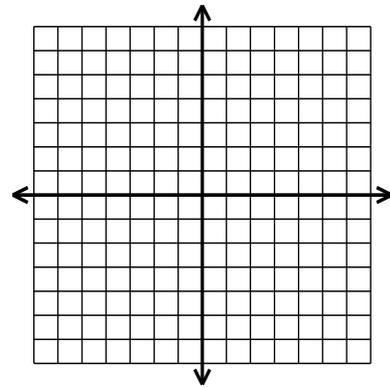
10.  $f(x) = |x| + 2$



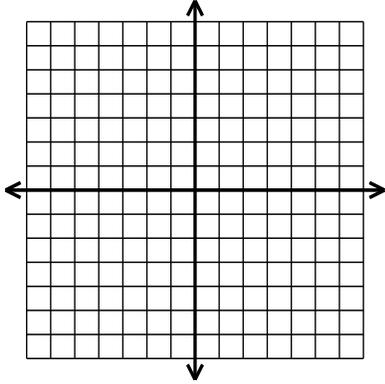
11.  $f(x) = |x| - 2$



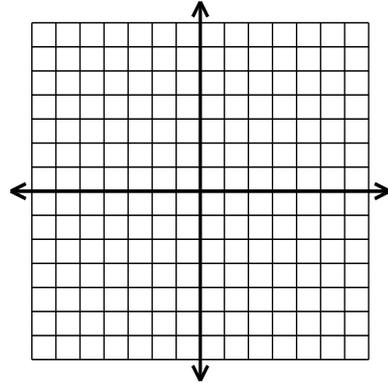
12.  $f(x) = |x + 2|$



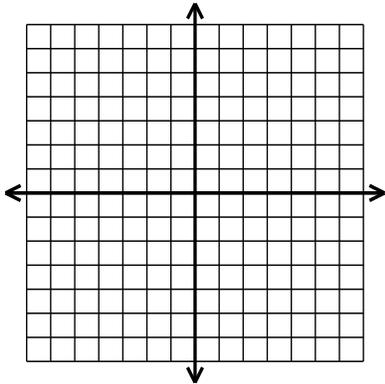
13.  $f(x) = |x - 2|$



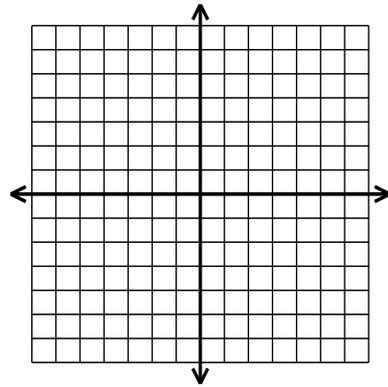
14.  $f(x) = -|x|$



15.  $f(x) = 2|x|$

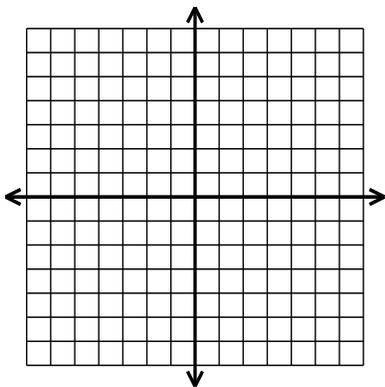


16.  $f(x) = \frac{1}{2}|x|$

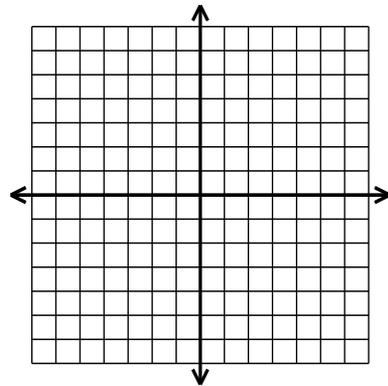


**Square Root**

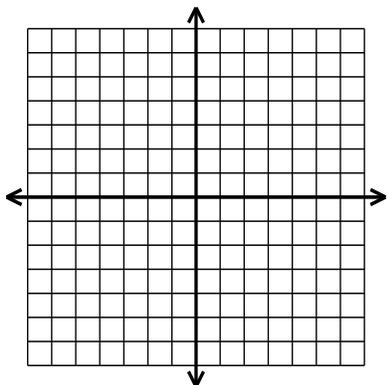
17.  $f(x) = \sqrt{x}$



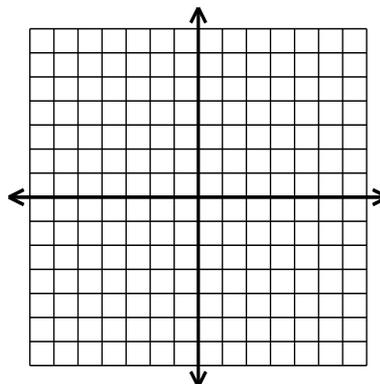
18.  $f(x) = \sqrt{x} + 2$



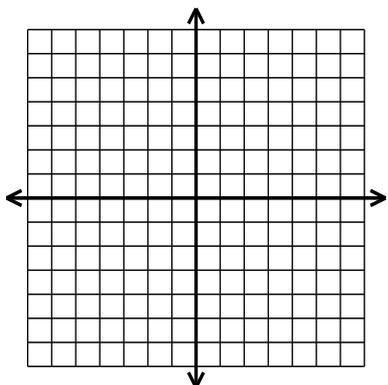
19.  $f(x) = \sqrt{x} - 2$



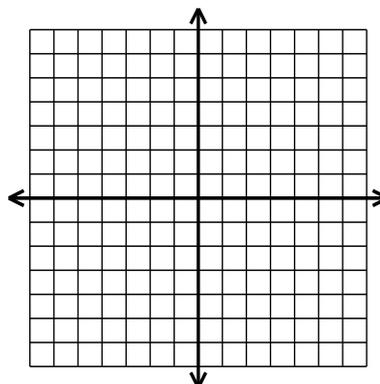
20.  $f(x) = \sqrt{x+2}$



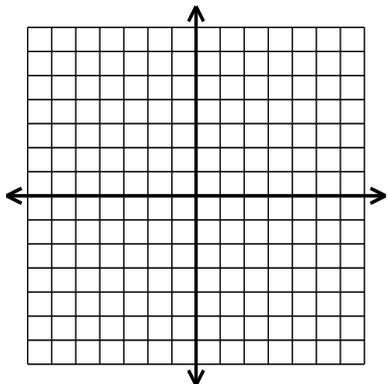
21.  $f(x) = \sqrt{x-2}$



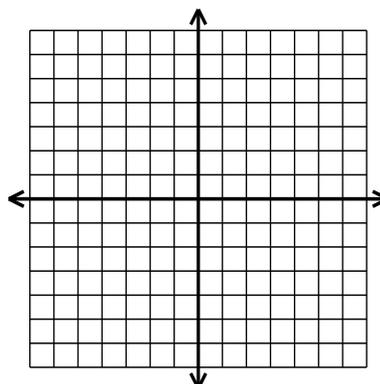
22.  $f(x) = -\sqrt{x}$



23.  $f(x) = 2\sqrt{x}$

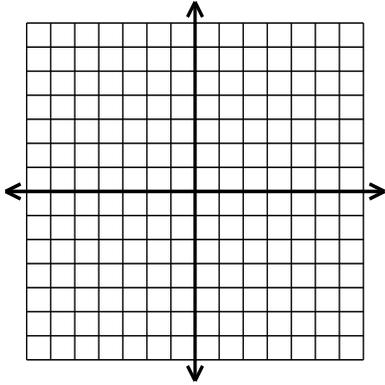


24.  $f(x) = \frac{1}{2}\sqrt{x}$

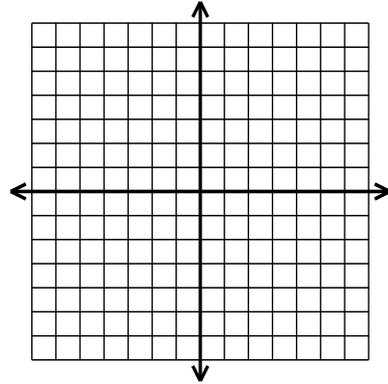


### Cube

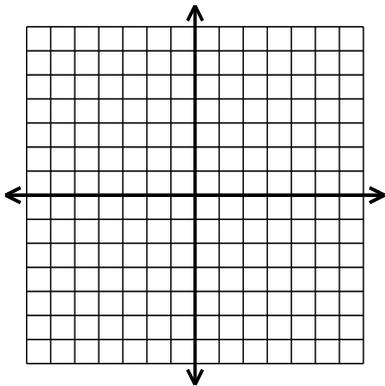
25.  $f(x) = x^3$



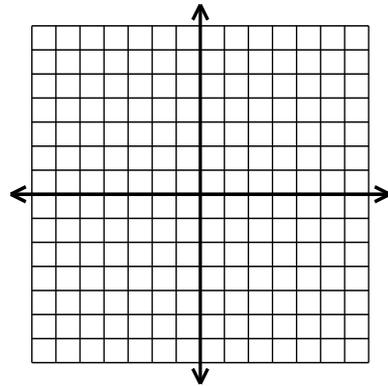
26.  $f(x) = x^3 + 2$



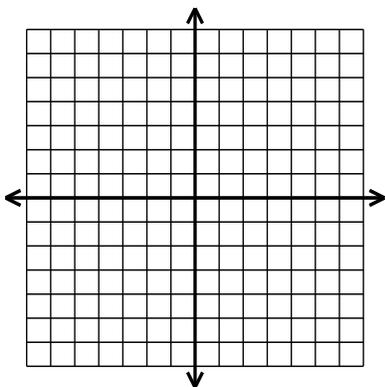
27.  $f(x) = x^3 - 2$



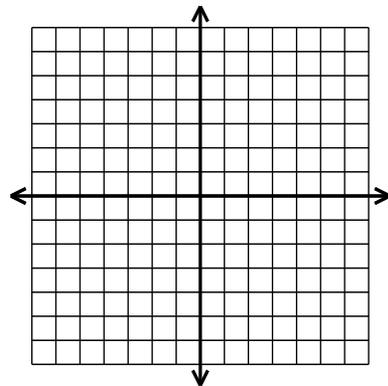
28.  $f(x) = (x+2)^3$



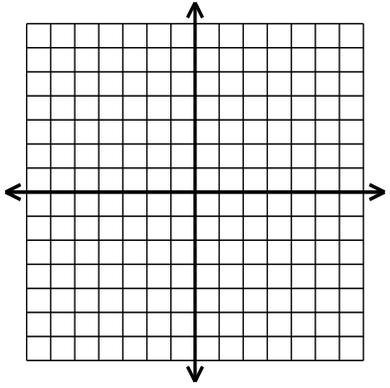
29.  $f(x) = (x-2)^3$



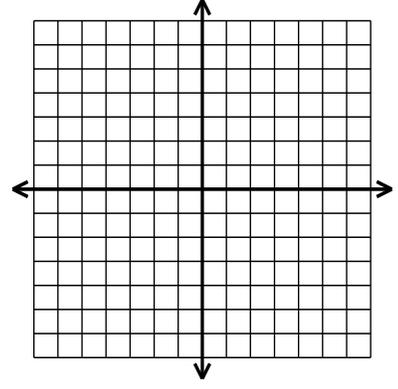
30.  $f(x) = -x^3$



31.  $f(x) = 2x^3$

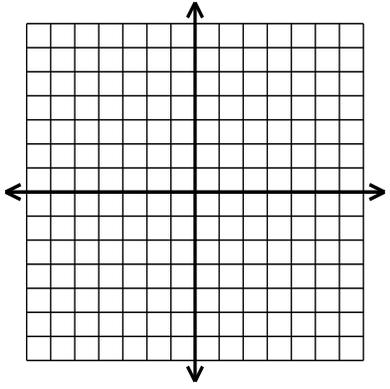


32.  $f(x) = \frac{1}{2}x^3$

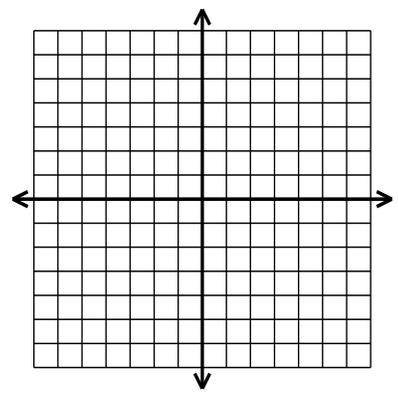


**Cube Root**

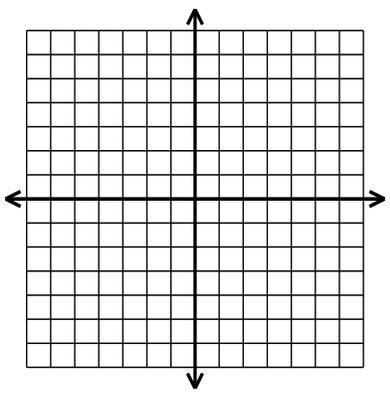
33.  $f(x) = \sqrt[3]{x}$



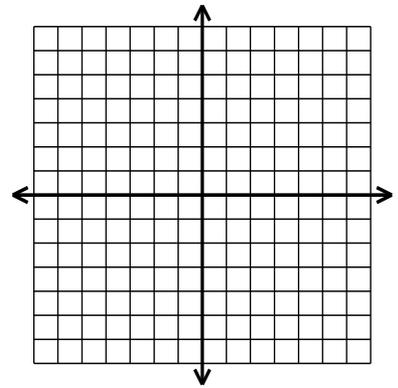
34.  $f(x) = \sqrt[3]{x} + 2$



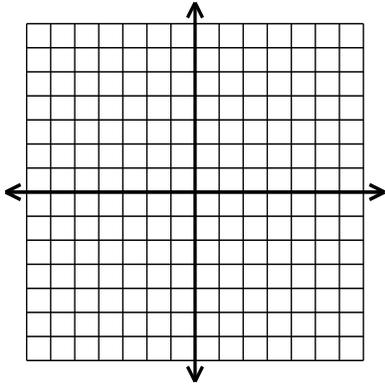
35.  $f(x) = \sqrt[3]{x} - 2$



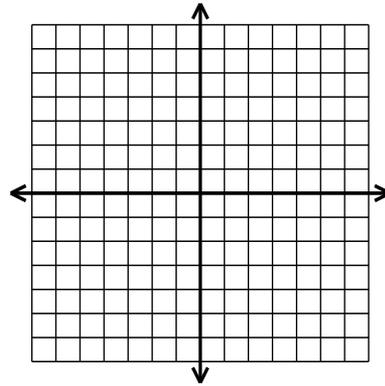
36.  $f(x) = \sqrt[3]{x+2}$



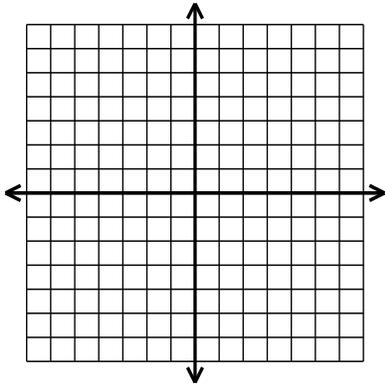
37.  $f(x) = \sqrt[3]{x-2}$



38.  $f(x) = -\sqrt[3]{x}$



39.  $f(x) = 2\sqrt[3]{x}$



40.  $f(x) = \frac{1}{2}\sqrt[3]{x}$

