Graph $g\left(x\right)=x^{2}$ on each of the graphs below. Then graph each transformation on the same graph.

Describe how the transformation is different than the original.

1. Also graph $g\left(x\right)+2$

$g\left(x\right)+2=\left(x^{2}\right)+2$

1. Also graph $g\left(x\right)-4$

$g\left(x\right)-4=\left(x^{2}\right)-4$

1. Also graph $2g\left(x\right)$

$2g\left(x\right)=2\left(x^{2}\right)$

1. Also graph $-g\left(x\right)$

$$-g\left(x\right)=-\left(x^{2}\right)$$

Graph $f\left(x\right)=-\frac{1}{2}x+3$ on each of the graphs below. Then graph each transformation on the same graph. Describe how the transformation is different than the original.

1. Also graph $f\left(x\right)+2$

$f\left(x\right)+2=\left(-\frac{1}{2}x+3\right)+2$

1. Also graph $f\left(x\right)-4$

$f\left(x\right)-4=\left(-\frac{1}{2}x+3\right)-4$

1. Also graph $2f\left(x\right)$

$2f\left(x\right)=2\left(-\frac{1}{2}x+3\right)$

1. Also graph $-f\left(x\right)$

$$-f\left(x\right)=-\left(-\frac{1}{2}x+3\right)$$

. Graph $g\left(x\right)=x^{3}$ on each of the graphs below. Then graph each transformation on the same graph.

Describe how the transformation is different than the original.

1. Also graph $g\left(x\right)+2$
2. Also graph $g(x-4)$

1. Also graph $2g\left(x\right)$

1. Also graph $-g\left(x\right)$

Write a general statement for each of the following:

|  |  |
| --- | --- |
| y = f(x) + d | * d > 0 moves \_\_\_\_\_\_\_\_\_\_\_
* d < 0 moves \_\_\_\_\_\_\_\_\_\_\_
 |
| y = f(x + c) | * c > 0 moves \_\_\_\_\_\_\_\_\_\_\_
* c < 0 moves \_\_\_\_\_\_\_\_\_\_\_\_
 |
| y = a·f(x) | * a > 1 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* 0 < a < 1 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
 |
| y = f(b·x) | * b > 1 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* 0 < b < 1 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
 |
| y = -f(x) | * Reflects it over \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
 |
| y = f(-x) | * Reflects it over \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
 |

1. Also graph $g\left(-x\right)$ f) Also graph $g\left(2x\right)$

$g\left(-x\right)=\left(-x^{2}\right)$ $g\left(2x\right)=\left(2x\right)^{2}$

