Name_____ Date_____ Period_____

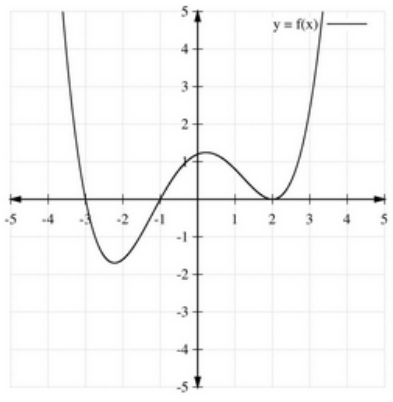
GRAPHING POLYNOMIALS WORKSHEET #3

For $f(x)=a\left(k(x-d)\right)^3+c$ and $f(x)=a\left(k(x-d)\right)^4+c$, describe the effects of changing *a*, *k*, *d* and *c* in terms of transformations.

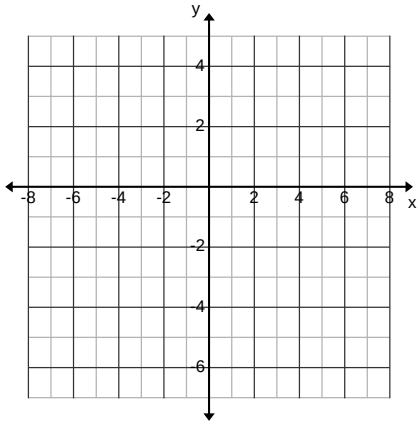
If the graph of a function $y=f(x)$ is provided, describe the transformation indicated.

1. $y=f(x+3)$	2. $y=f(5x)$
3. $y=-f(x)$	4. $y=2f(x)$
5. $y=f(-3x)$	6. $y=f\left(0.5(x+3)\right)$
7. $y=f(x)+5$	8. $y=-f(-x)$
9. $y=f\left(-(x+2)\right)$	10. $y=\frac{1}{2}f(x-1)+4$

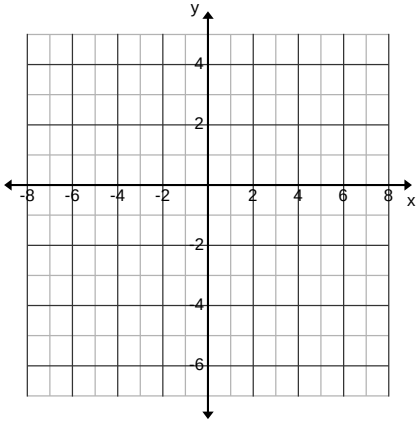
11. The graph of *f(x)* is shown below. Use the graph of *f(x)* to graph…



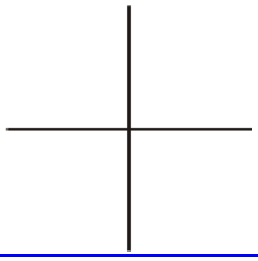
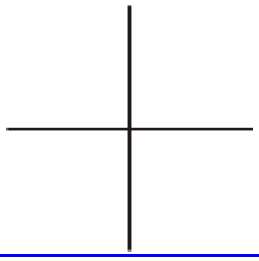
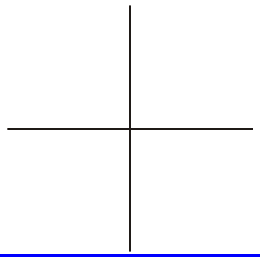
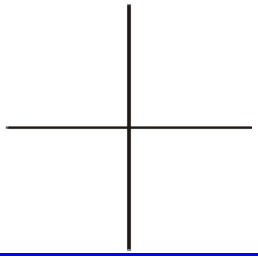
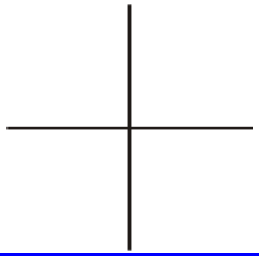
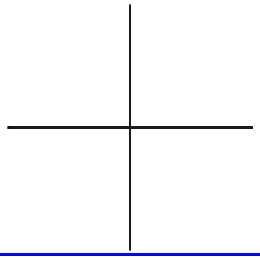
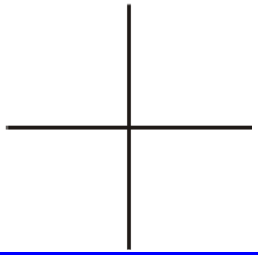
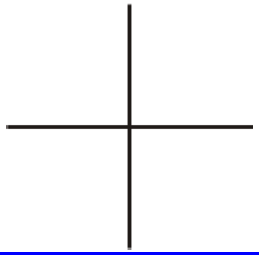
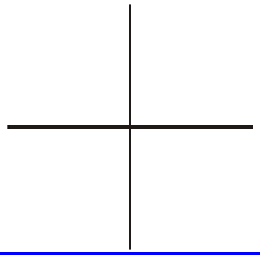
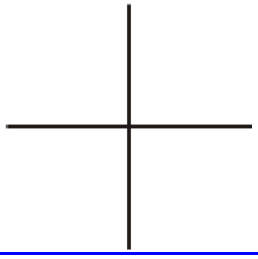
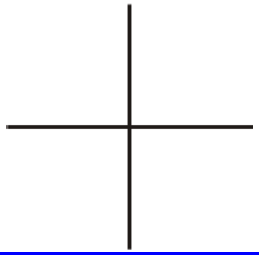
a) *f(x+3)*



b) *f(x)-3*



Using your knowledge of transformations and $f(x)=x^3$ or $f(x)=x^4$ as the base graphs, sketch the graphs of the following polynomial functions and confirm using technology.

12) $f(x)=-0.5x^3$ 	13) $f(x)=-x^3+1$ 	14) $f(x)=-(x+1)^3$ 
15) $f(x)=(x-2)^3$ 	16) $f(x)=2x^3-3$ 	17) $f(x)=-\frac{1}{4}(x-3)^3+1$ 
18) $f(x)=x^4+2$ 	19) $f(x)=-0.25x^4$ 	20) $f(x)=-x^4$ 
21) $f(x)=(x-2)^4$ 	22) $f(x)=-\frac{1}{2}x^4+3$ 	23) $f(x)=(2(x+3))^4$