PreCalculus 11: Chapter 1 Pre-Test

1. Graph the following equations and answer the indicated questions for each.

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

1. Vertex \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. Axis of symmetry \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. y intercept \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
4. x intercept \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
5. Domain\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
6. Range \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
7. Maximum/Minimum\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
8. Graph the following equation and answer the indicated questions

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

1. Vertex \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. Axis of symmetry \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. y intercept \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
4. x intercept \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
5. Domain\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
6. Range \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
7. Maximum/Minimum\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
8. Factor the following.
9. $-2x^{4}-4x^{3}+30x^{2}$
10. $2x^{2}-8x+6$
11. $25x^{4}-81y^{6}$
12. Find all the integers *k* which make the trinomial a perfect square.
13. $y^{2}-6y+k$
14. $kx^{2}-24x+9$
15. Given the following quadratic equations, state how it has changed from the equation:

 $y=x^{2}$

1. $y=-\left(x-4\right)^{2}+7$
2. $y=4\left(x+7\right)^{2}-5$