SECTION 8.1

1. Describe, in one sentence, how the graph of $y = \frac{1}{3}x^2$ differs from the graph of $y = x^2$.
2. Describe, in one sentence, how the graph of $y = 5x^2$ differs from the graph of $y = x^2$.
3. Describe, in one sentence, how the graph of $y = -\frac{2}{3}x^2$ differs from the graph of $y = x^2$.
4. Describe, in one sentence, how the graph of $y = -4x^2$ differs from the graph of $y = x^2$.
5. Without graphing, which parabola, $y = 2x^2$ or $y = 7x^2$, will be wider? How can you tell?
6. Without graphing, which parabola, $y = \frac{1}{3}x^2$ or $y = -3x^2$, will be wider? How can you tell?
7. Without graphing, which parabola, $y = -5x^2$ or $y = \frac{1}{2}x^2$, will be wider? How can you tell?
8. Without graphing, which parabola, $y = -\frac{1}{5}x^2$ or $y = -\frac{2}{5}x^2$, will be wider? How can you tell?
9. Use the table below to determine the vertex of the parabola. Explain how you determined your answer.

x	–3	–2	–1	0	1	2	3
y	18	8	2	0	2	8	18

10. Use the table below to determine the vertex of the parabola. Explain how you determined your answer.

x	–3	-2	–1	0	1	2	3
y	6.5	4	2.5	2	2.5	4	6.5

11. Use the table below to determine the vertex of the parabola. Explain how you determined your answer.

x	–3	–2	–1	0	1	2	3
y	8	2	0	2	8	18	32

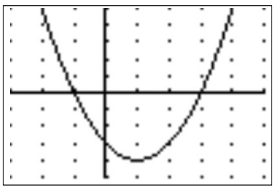
12. Use the table below to determine the vertex of the parabola. Explain how you determined your answer.

x	–4	–3	–2	–1	0	1	2
y	–6	–7	–6	–3	2	9	18

13. Find the equation for the axis of symmetry for $f(x) = 3x^2 + 6x - 4$.
14. Find the equation for the axis of symmetry for $f(x) = 2x^2 - 4x + 9$.
15. Find the equation for the axis of symmetry for $f(x) = -x^2 - 5x + 7$.
16. Find the equation for the axis of symmetry for $f(x) = \frac{1}{2}x^2 - 2x - 3$.
17. Find the vertex for $f(x) = 3x^2 + 6x - 4$. Use this to set an appropriate window to show the parabola on your graphing calculator.
18. Find the vertex for $f(x) = 2x^2 - 4x + 9$. Use this to set an appropriate window to show the parabola on your graphing calculator.
19. Find the vertex for $f(x) = -x^2 - 5x + 7$. Use this to set an appropriate window to show the parabola on your graphing calculator.

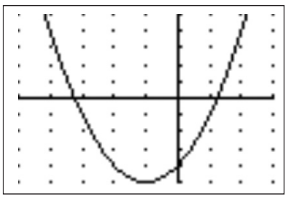
20. Find the vertex for $f(x) = \frac{1}{2}x^2 - 2x - 3$. Use this to set an appropriate window to show the parabola on your graphing calculator.

21. Use the graph of f to complete the table. The scale is one on both axes.



X	Y
–2	5
–1	
0	
1	
2	
3	0
4	5

22. Use the graph of f to complete the table. The scale is one on both axes.



X	Y
–4	4
–3	
–2	–4
–1	
0	
1	–1
2	