**Practice 4-1: Complete your assignment on a separate sheet of GRAPH paper. Show all work.**

1. Graph each function, describe the transformation, identify the vertex, axis of symmetry and maximum or minimum value.
2. $y=-x^{2}$ b. $y=-x^{2}-7$ c. $y=(x+1)^{2}-4$
3. When does the graph of a quadratic function have a minimum value?
4. Describe the similarities and differences between the graphs of $y=-(x+6)^{2}-7$ and $y=(x+6)^{2}$

**Practice 4-2: Complete your assignment on a separate sheet of GRAPH paper. Show all work.**

1. Identify the vertex, axis of symmetry and maximum or

minimum value for the parabola.

1. Graph $y=x^{2}-2x+4$
2. Graph, state the vertex, axis of symmetry, maximum or minimum and range.
3. $y=x^{2}+2x+1$ **b.**  $y=3x^{2}-4x-2$ **c.** $ y=2x^{2}+4x$

**4-3 practice**

1. A model for a company’s revenue from selling a software package is $R=-2.5p^{2}+500p$, p is the price of the software. What price would maximize revenue? What is the maximum revenue?
2. Find an equation in standard form of the parabola passing through the points. (3, -1), (2, -5), (4, -5)

|  |  |  |
| --- | --- | --- |
|  | **Time (s)** | **Height (ft)** |
|   | 0 | 5.5 |
|   | 1 | 6.0 |
|   | 2 | 5.5 |
|   | 3 | 4.0 |

1. A player hits a tennis ball across the court and records the height of the ball at different times, as shown in the table below.
2. Find a quadratic model for the data.
3. Use the model to estimate the height of the ball at 4 seconds.
4. What is the ball’s maximum height?

**Practice 4-4 Part 1: Complete your assignment on a separate sheet of GRAPH paper. Show all work.**

 **1.**  Find the GCF

a. $15x^{2}-25x$ b. $21h^{3}+35h^{2}-28h$

 **2.** Factor

 a. $x^{2}+3x+2$ b. $x^{2}+15x+36$ c. $-r^{2}+11r-1$0

1. $a^{2}-5a-14$ e. $a^{2}+10a-75$ f. $ 27p^{2}-9p+18$
2. Factor
3. $3a^{2}+31a+36$ b. $ 7x^{2}-8x-12$

**Practice 4-4 Part 2: Complete your assignment on a separate sheet of paper. Show all work.**

 **1.**  Factor

a. $9x^{2}-1$ b. $64x^{2}-16$ c. $18h^{3}-8h$

 d. $x^{2}-18x+81$ e. $12x^{2}+36x+27$ f. $4x^{2}-22x+10$