Homework: pg 145 #1-4, 5ac, 6, 9ace, 11, (12)

**Properties of Quadratic Functions**

1. Determine whether each function is linear, quadratic or neither.

|  |  |
| --- | --- |
| x | y |
| -2 | 5 |
| -1 | 7 |
| 0 | 11 |
| 1 | 17 |
| 2 | 25 |

|  |  |
| --- | --- |
| x | y |
| 0 | 5 |
| 1 | -1 |
| 2 | -7 |
| 3 | -13 |
| 4 | -19 |

|  |  |
| --- | --- |
| x | y |
| -4 | 3 |
| -2 | 6 |
| 0 | 12 |
| 2 | 24 |
| 4 | 48 |

a) b) c)

|  |  |
| --- | --- |
| x | y |
| -2 | 5 |
| -1 | 7 |
| 0 | 11 |
| 1 | 17 |
| 2 | 25 |

1. Determine whether each equation represents a parabola that opens up or down.
2. $y=3x^{2}+2x-7$ b) $-2(x-3)(x+1)$ c) $y=4(x-1)^{2}+3$

|  |  |
| --- | --- |
| x | y |
| -2 | 5 |
| -1 | 7 |
| 0 | 11 |
| 1 | 17 |
| 2 | 25 |

1. State the zeros (x-intercepts) and the equation of the axis of symmetry.
2. $ y=2(x-1)(x+5)$ b) $y=-4x^{2}+8x+12$

1. Determine the vertex of the parabola represented by each equation.
2. $y=2(x+3)^{2}-5$ b) $y=-3(x-1)(x+5)$
3. Determine the x and y intercepts.
4. $y=2(x+3)(x+1)$ b) $y=2x^{2}+4x-16$
5. A flare is launched from a sinking ship. The height of the flare, H(t) in m, is modeled by the equation:

 $H\left(t\right)=-5t^{2}+30t+35$

where

* t is the elapsed time in seconds after the flare was launched.

 How long was the flare airborne and what maximum height did it reach?