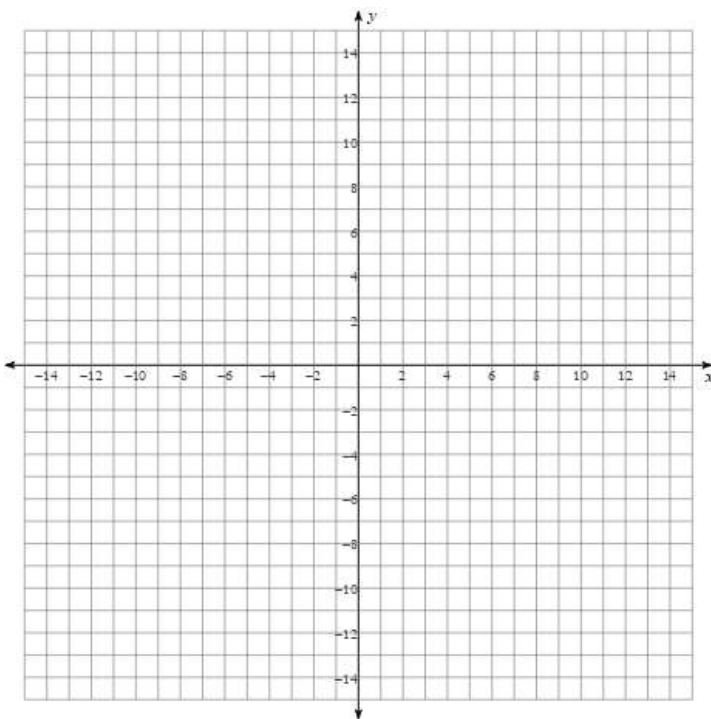


For each quadratic equation:

- a) Complete the square to put the equation in vertex form.
 - b) Graph the quadratic equation using shifts.
 - c) State the coordinates of the vertex.
 - d) Determine whether the vertex is a minimum or a maximum.
 - e) State the equation for the Axis of Symmetry.
 - f) Find the coordinates of the roots by graphing. If integral roots cannot be found, estimate the roots by stating the consecutive integers between which the roots lie.
 - g) State the domain and range of the parabola.
- 1) $f(x) = x^2 - 4x + 5$
- a) Vertex form of equation:

b)



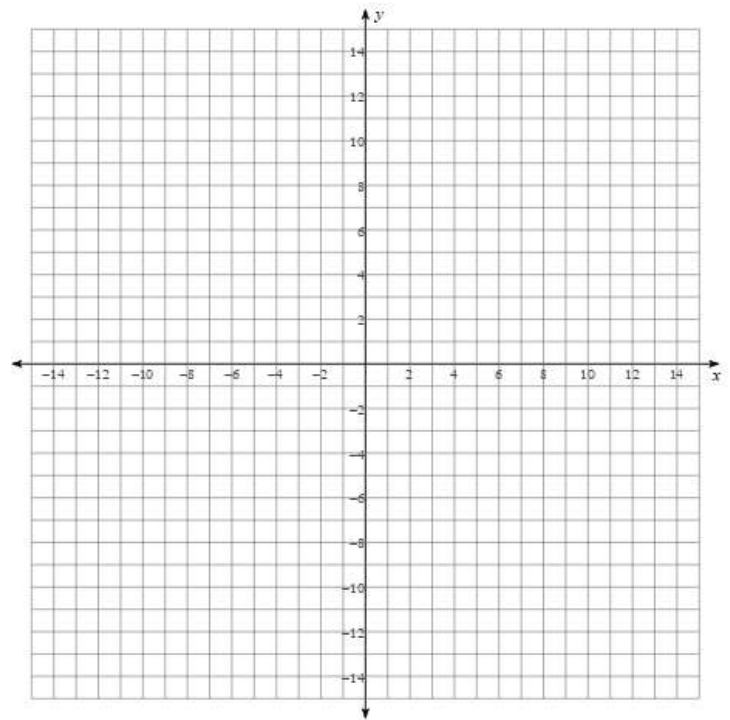
- c) Vertex:
- d) Circle one:

Maximum	Minimum
---------	---------
- e) Axis of Symmetry:
- f) Roots:
- g) Domain:

Range:

- 2) $f(x) = x^2 - 2x + 1$
- a) Vertex form of equation:

b)



- c) Vertex:
- d) Circle one:

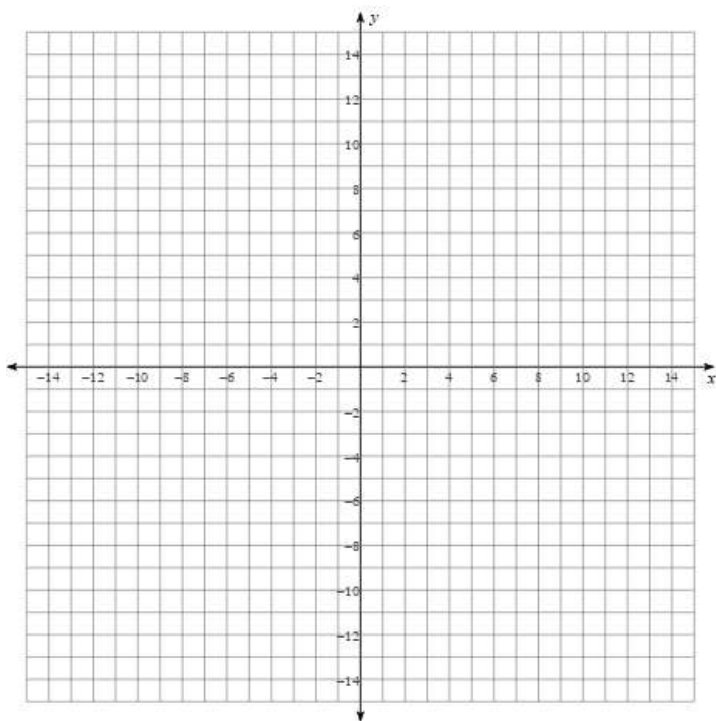
Maximum	Minimum
---------	---------
- e) Axis of Symmetry:
- f) Roots:
- g) Domain:

Range:

3) $f(x) = 2x^2 + 4x - 6$

a) Vertex form of equation:

b)



c) Vertex:

d) Circle one:

Maximum Minimum

e) Axis of Symmetry:

f) Roots:

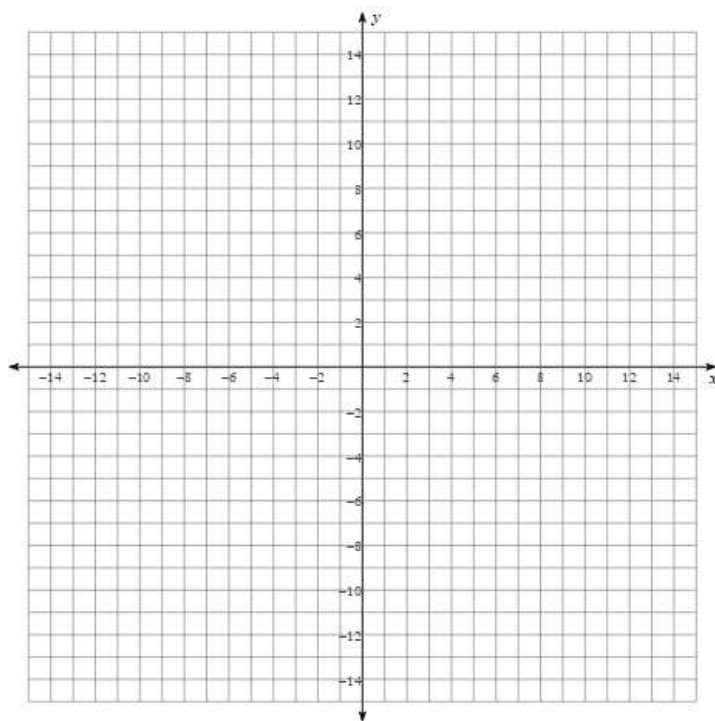
g) Domain:

Range:

4) $f(x) = x^2 + 6x + 3$

a) Vertex form of equation:

b)



c) Vertex:

d) Circle one:

Maximum Minimum

e) Axis of Symmetry:

f) Roots:

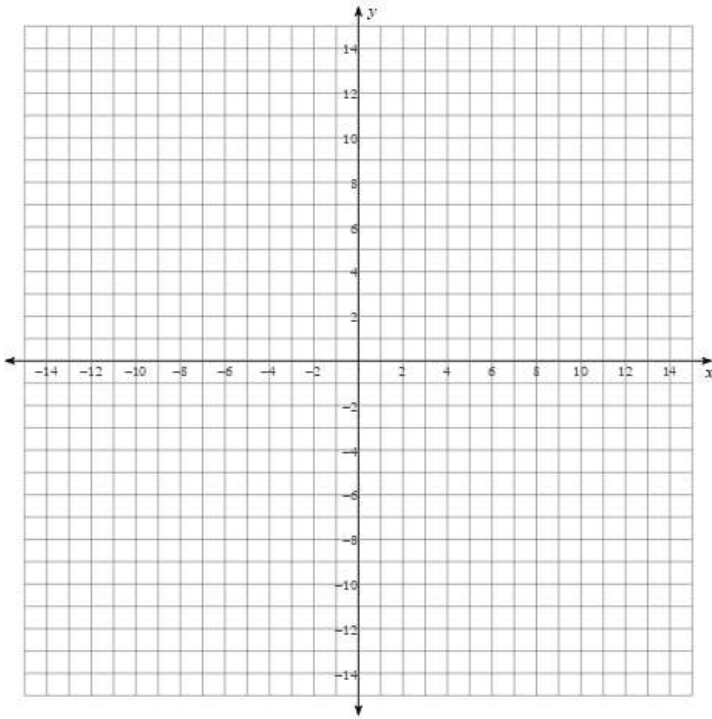
g) Domain:

Range:

5) $f(x) = 4x^2 - 12x + 3$

a) Vertex form of equation:

b)



c) Vertex:

d) Circle one:
Maximum Minimum

e) Axis of Symmetry:

f) Roots:

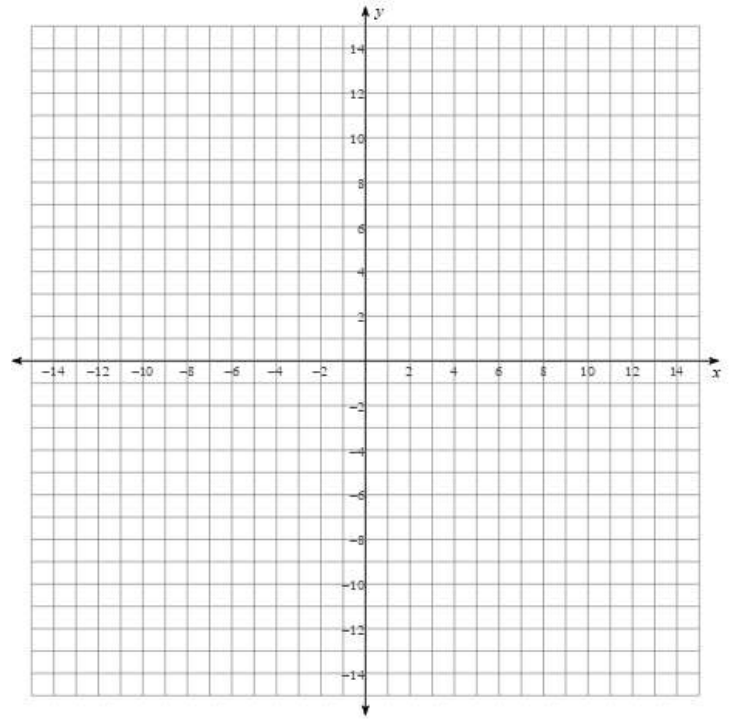
g) Domain:

Range:

6) $f(x) = -x^2 + 4x - 1$

a) Vertex form of equation:

b)



c) Vertex:

d) Circle one:
Maximum Minimum

e) Axis of Symmetry:

f) Roots:

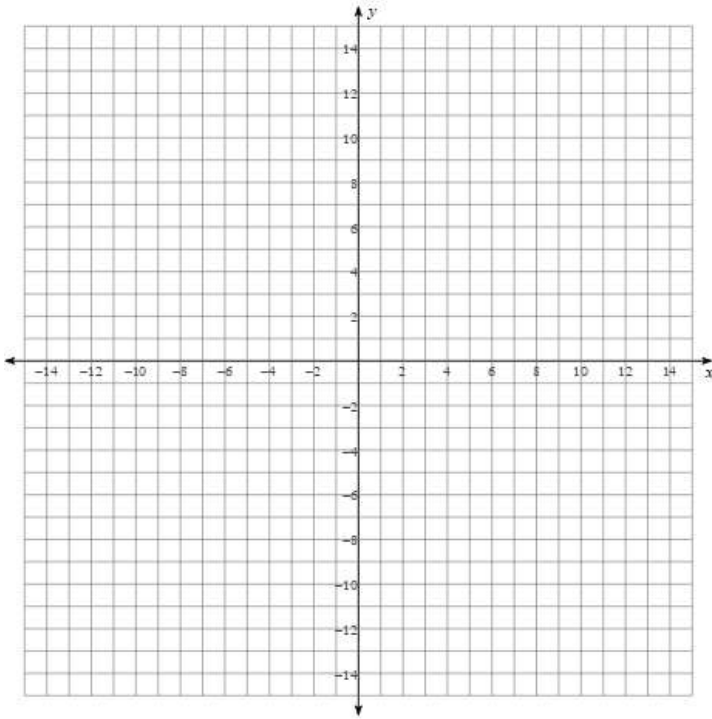
g) Domain:

Range:

7) $f(x) = 2x^2 + 4$

a) Vertex form of equation:

b)



c) Vertex:

d) Circle one:

Maximum Minimum

e) Axis of Symmetry:

f) Roots:

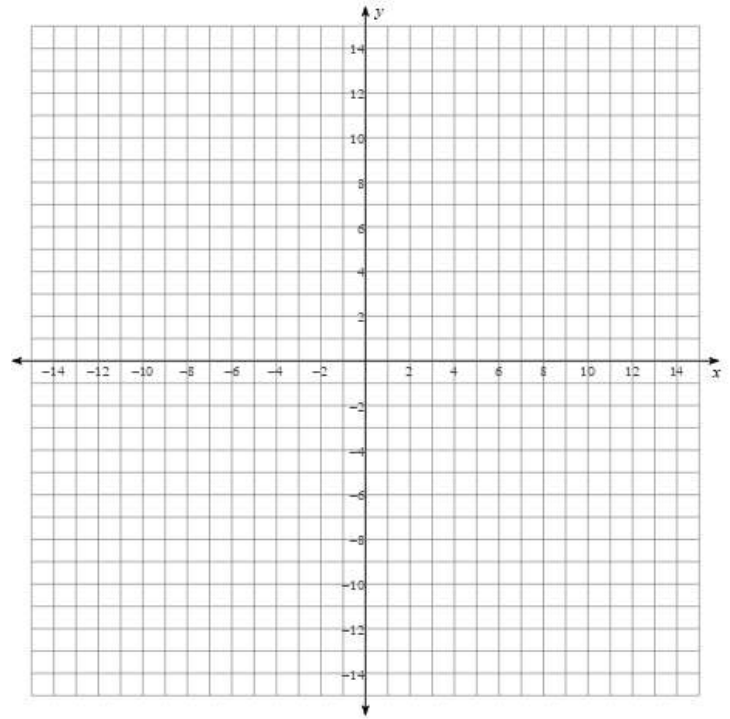
g) Domain:

Range:

8) $f(x) = -2x^2 + 10x - 5$

a) Vertex form of equation:

b)



c) Vertex:

d) Circle one:

Maximum Minimum

e) Axis of Symmetry:

f) Roots:

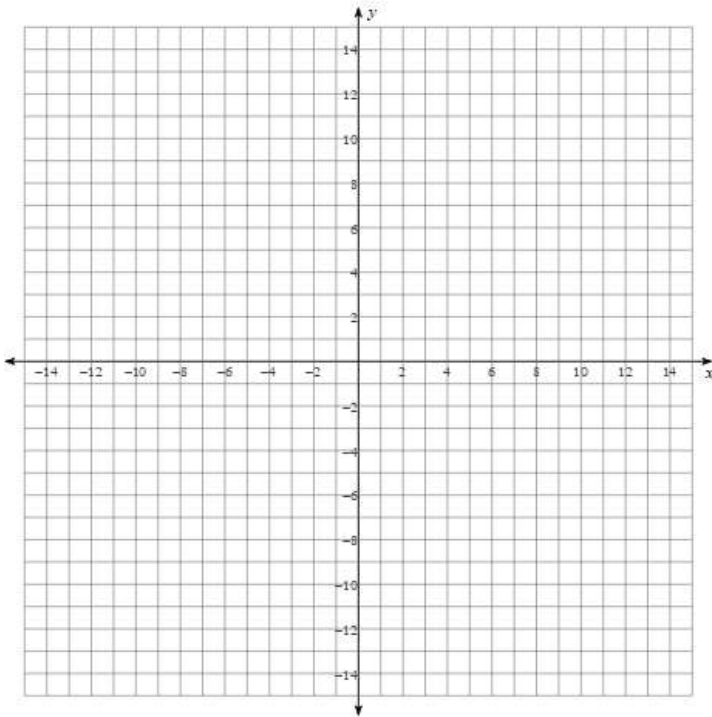
g) Domain:

Range:

9) $f(x) = \frac{1}{2}x^2 + 2x + 7$

a) Vertex form of equation:

b)



c) Vertex:

d) Circle one:
Maximum Minimum

e) Axis of Symmetry:

f) Roots:

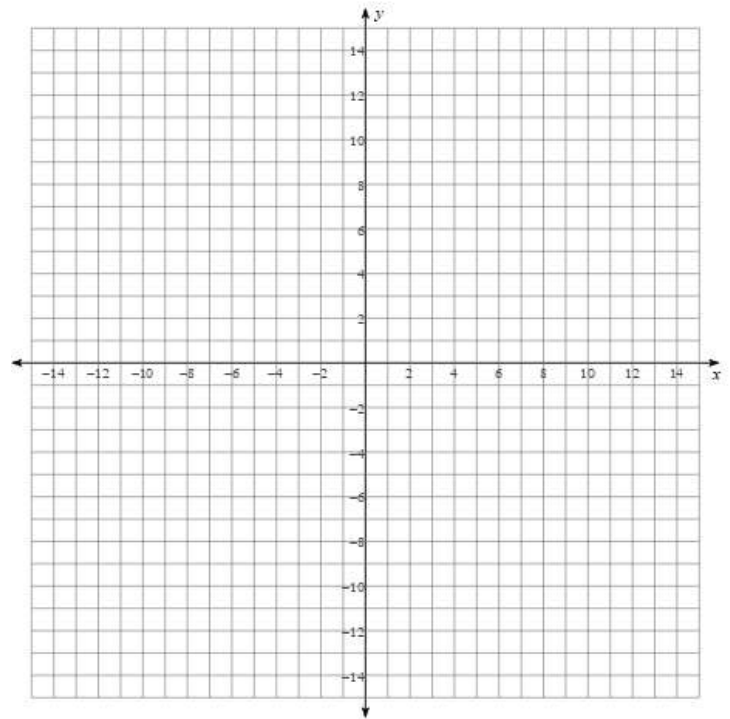
g) Domain:

Range:

10) $f(x) = x^2 - 4x + 5$

a) Vertex form of equation:

b)



c) Vertex:

d) Circle one:
Maximum Minimum

e) Axis of Symmetry:

f) Roots:

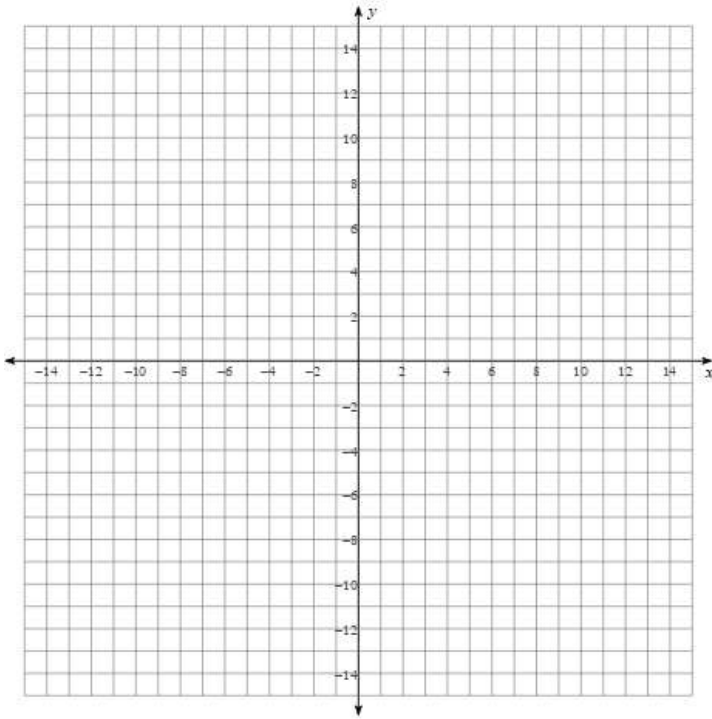
g) Domain:

Range:

11) $f(x) = -2x^2 + 8x - 3$

a) Vertex form of equation:

b)



c) Vertex:

d) Circle one:
 Maximum Minimum

e) Axis of Symmetry:

f) Roots:

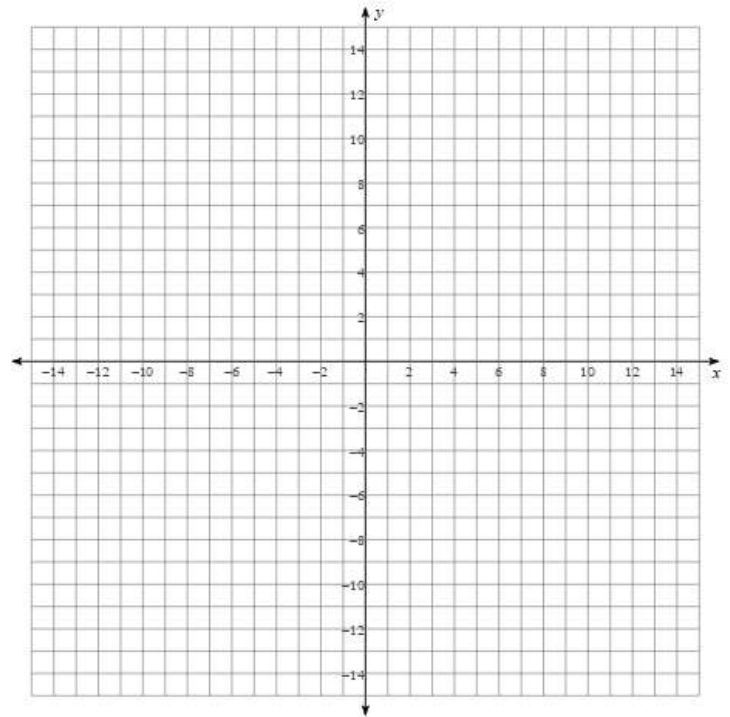
g) Domain:

 Range:

12) $f(x) = -\frac{1}{2}x^2 - 4x - 3$

a) Vertex form of equation:

b)



c) Vertex:

d) Circle one:
 Maximum Minimum

e) Axis of Symmetry:

f) Roots:

g) Domain:

 Range: