

Quadratic and Linear Functions

1. Convert each of the following into the form $y = a(x-h)^2 + k$

a) $y = 3x^2 + 2x + 1$

b) $y = -2x^2 + 2x - 1$

2. For each of the given questions determine the indicated information:

a) $y = -3(x+2)^2 + 1$

b) $y = 4(x-3)^2 - 2$

1. direction of opening _____

1. Direction of opening _____

2. shape _____

2. Shape _____

3. max/min point _____

3. max/min point _____

4. max/min value _____

4. Max/min value _____

5. axis of symmetry _____

5. Axis of symmetry _____

6. coordinates of vertex _____

6. Coordinates of vertex _____

7. y-intercept _____

7. y-intercept _____

8. domain of function _____

8. Domain of function _____

9. range of function _____

9. Range of function _____

10. Table of Values

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x					
y					

x					
y					

3. Using the appropriate formula determine the equation of the axis of symmetry, the min/max value and the coordinated of the vertex of the equation $y = 2x^2 - 6x - 5$

4. Determine the required info:

a) slope and y-intercept of the equation:

$5x - 8y = -12$

b) slope, midpoint, distance of the line joining the points

$(-5, -9)$ and $(-3, 11)$

5. Determine the equation of the line given: **(NO FRACTIONAL COEFFICIENTS)**

a) $m = 2/3$ and $b = -6$

b) $m = -4$ and contains the point $(-2, -4)$

c) passes through the points $(2, 7)$ and $(-4, -3)$

d) passes through the point $(1,3)$ and is parallel to a line with equation $5x - 3y = 4$

e) of the perpendicular bisector of the line segment joining the points $(6, 2)$ and $(10, -4)$