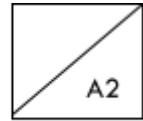
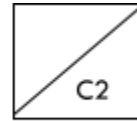


Cycle 1 Cumulative Review



Name: _____

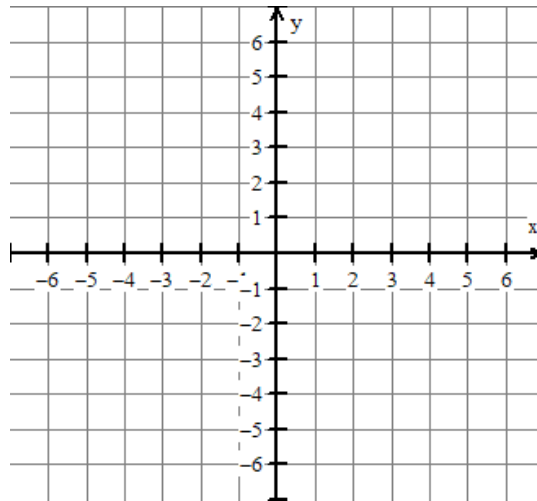
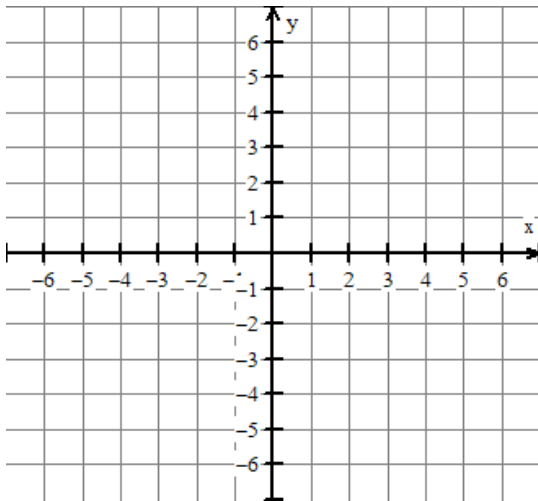
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1.1 - Solving Systems by Graphing

1. Solve each linear system by graphing:

a) $y = -\frac{5}{3}x + 3$
 $y = \frac{1}{3}x - 3$

b) $y = 4x + 3$
 $y = -x - 2$



2. Explain (in words **or** with a diagram) the three ways that linear systems can intersect.

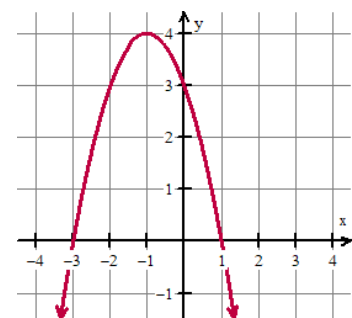
1.2 – Introduction to Quadratic Relations

3. Does the table of values represent a **quadratic** relation? Explain why or why not:

x	y
0	1
1	8
2	13
3	16
4	17

4. For the following parabola, state the following key features:

Vertex: _____ x intercept(s): _____ axis of symmetry: _____

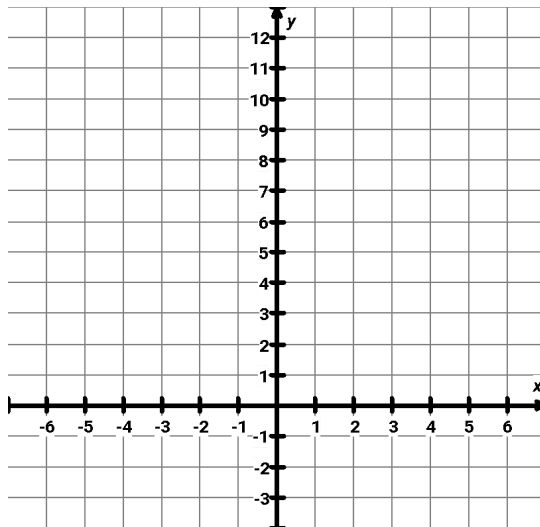
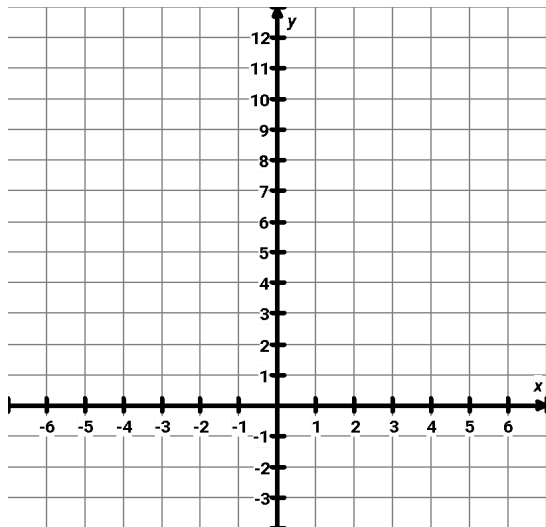


1.3 – Translations of $y = x^2$ & 1.4 – Combining Translations of $y = x^2$

5. Given each quadratic relations: graph $y = x^2$, and then use that to graph each transformed parabola.

a) $y = (x - 5)^2 + 4$

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



6. Describe the transformations for each parabola.

a) $y = (x + 4)^2 - 8$

b) $y = x^2 - 7$

7. Write an equation for the quadratic relation that results from each transformation:

a) The graph of $y = x^2$ is translated 4 units to the right, and 7 units upward

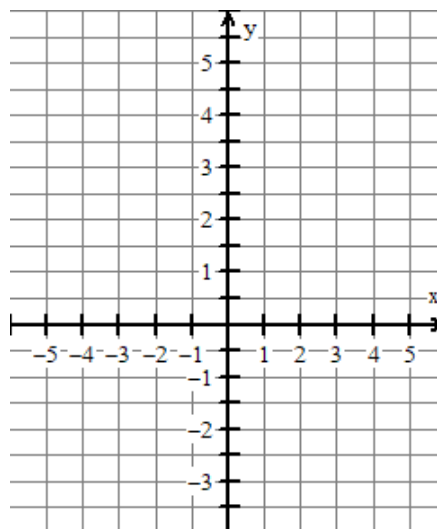
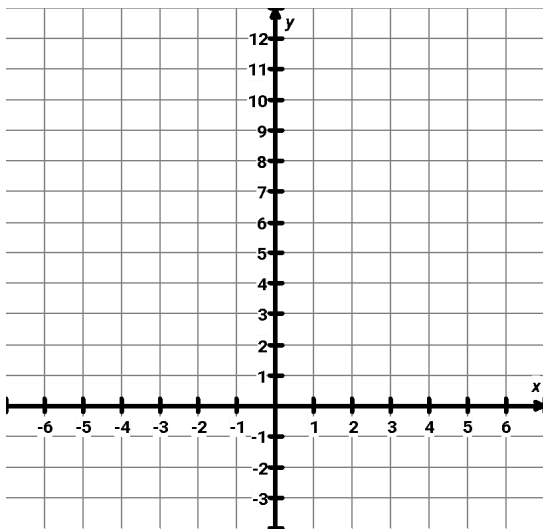
b) The graph of $y = x^2$ is translated 2 units to the left, and 14 units downward

1.5 – Transformations in the form of $y = ax^2$

8. Given each quadratic relations: graph $y = x^2$, and then use that to graph each transformed parabola.

b) $y = 3x^2$

b) $y = -\frac{1}{2}x^2$



1.6 – Expanding Binomials (FOIL)

9. Expand and simplify:

a) $(x - 3)(x + 7)$

b) $3(2x + 5)(x - 8)$

c) $(x + 6)^2$

d) $(x + 1)(x + 2) - (x + 6)(2x + 3)$

1.7 – Standard form of a Quadratic

10. State the y-intercept of the following quadratic relations:

a) $y = 4x^2 + 13x + 7$

b) $y = -2x^2 + 5$

c) $y = x^2 + x$

11. A ball is thrown upward from a balcony. The height, h , in metres, of the ball above the ground after t seconds can be found using the relation $h = -4.9t^2 + 30t + 7$.

a) What was the height of the balcony?

b) Determine the height 2 seconds after it was thrown.

1.8 - Exponent Laws Review

12. Simplify. Evaluate where possible, and write final answers using positive exponents.

a) $\left(\frac{2}{3}\right)^{-2}$

b) 8^{-3}

c) $\frac{4^6 4^7}{4^{-3}}$

d) $\frac{300^{40} 300^{50}}{300^{90}}$

e) $\frac{-15x^6}{3x^{-9}}$

1.9 – Common Factoring & 1.10 - Factoring by Grouping

13. Factor the following expressions

a) $4x^2 + 8x^5 - 2x^3$

b) $10x^4 y^2 + 15x^3 y^5$

c) $x^3 + 7x^2 + 2x + 14$

d) $-6y^4 + 12y^3 - 14y$
 $3x^2 + xy - 12x + 4$

e) $x^2 + 4x - x - 4$

f)

14. Write a polynomial with **three different terms** that has a GCF of $7x^4$

1.11 - Length of a Line Segment

15. Calculate the length of the line segment defined by the endpoints $A(4, -3)$ and $B(-1, -9)$

1.12 - Similar Triangles

16. Given that $\triangle ABC \sim \triangle DEF$, determine the values of b and f .

