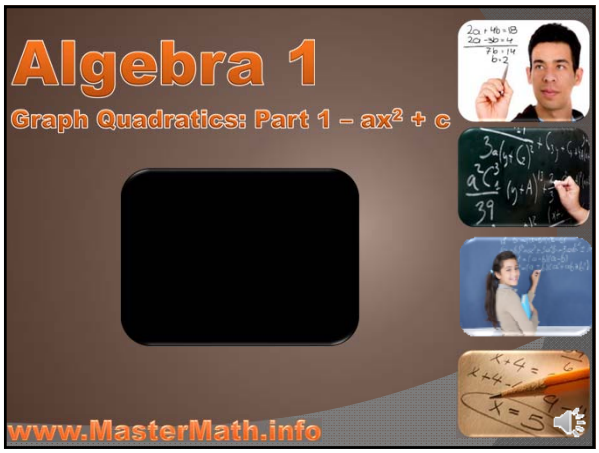
Algebra 1
Graph Quadratics: Part 1 – ax² + c
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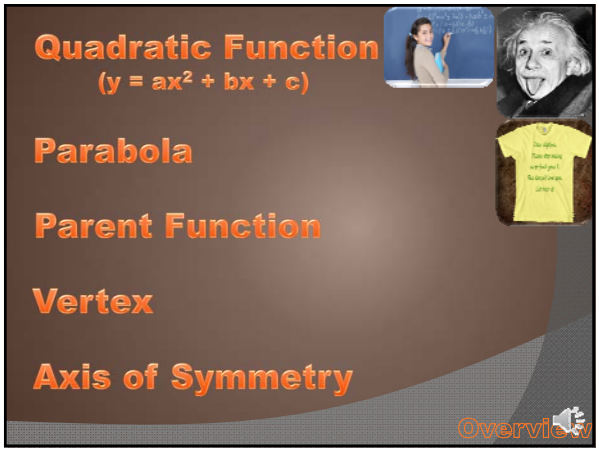
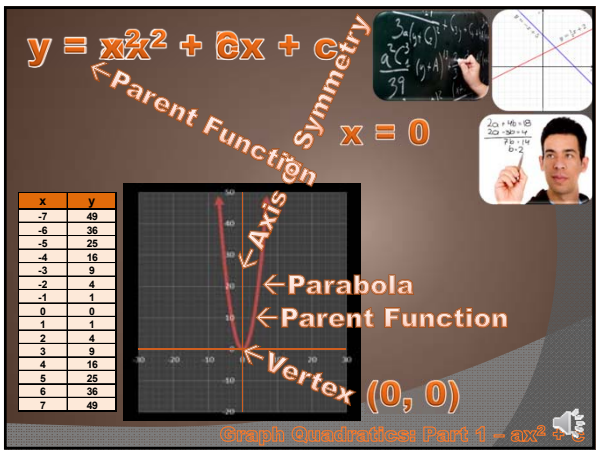
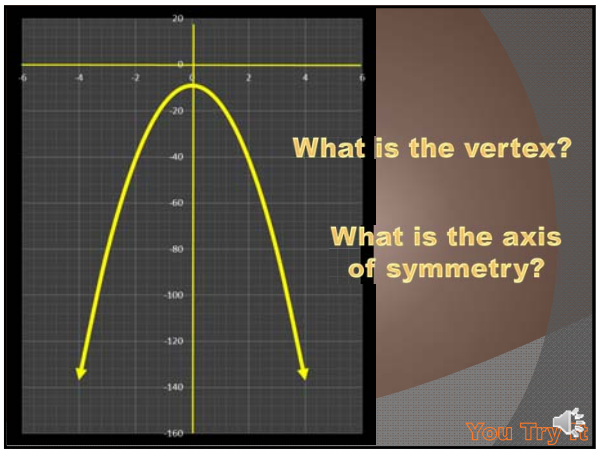
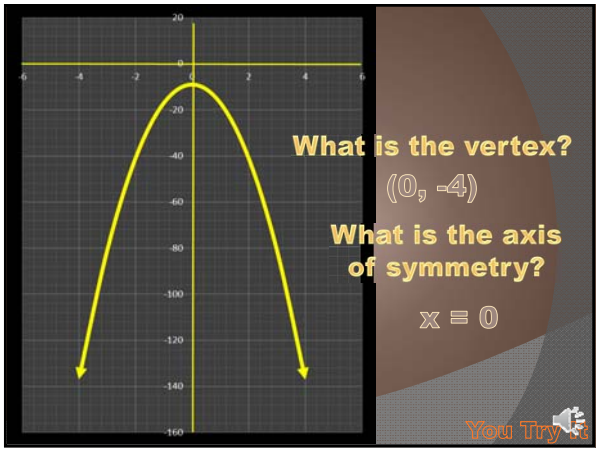
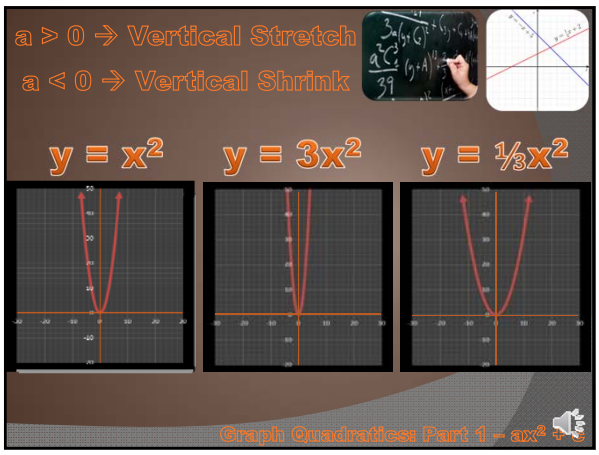
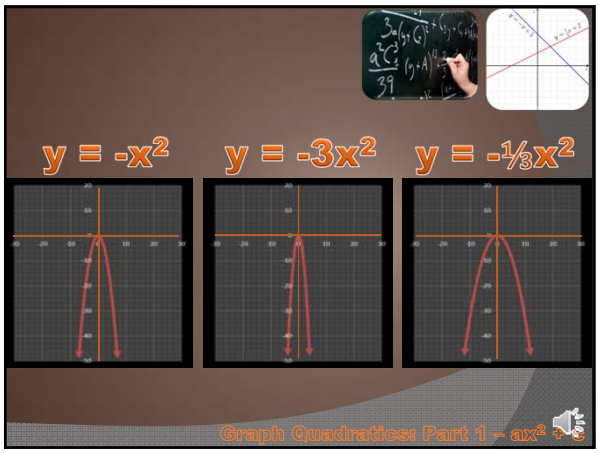

Quadratic Function
(y = ax² + bx + c)
Parabola
Parent Function
Vertex
Axis of Symmetry
Overview

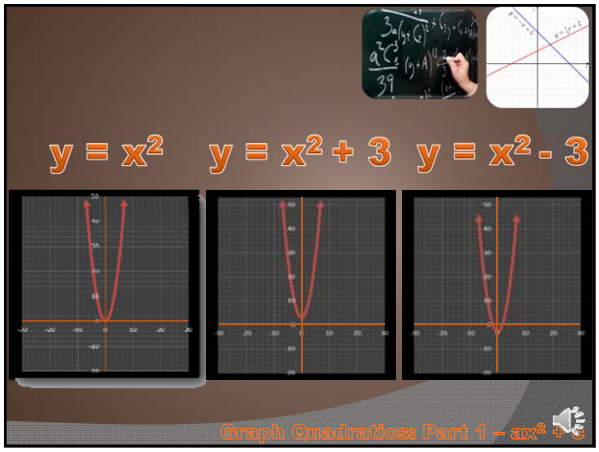

y = x² + 0x + c
Parent Function
Symmetry
x = 0
x y
-7 49
-6 36
-5 25
-4 16
-3 9
-2 4
-1 1
0 0
1 1
2 4
3 9
4 16
5 25
6 36
7 49
Axis
Parabola
Parent Function
Vertex
(0, 0)
Graph Quadratics: Part 1 – ax² + c

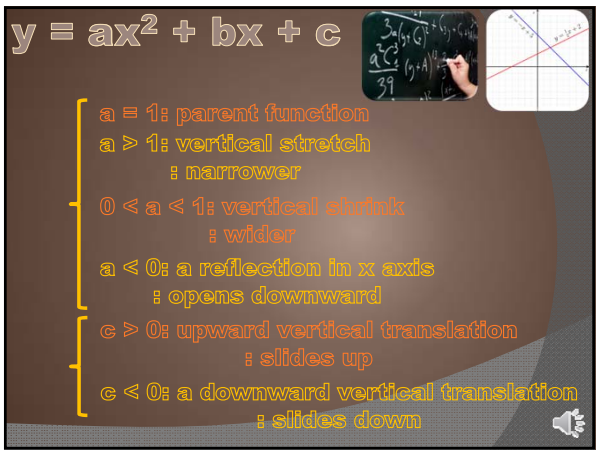

What is the vertex?
What is the axis of symmetry?
You Try It!

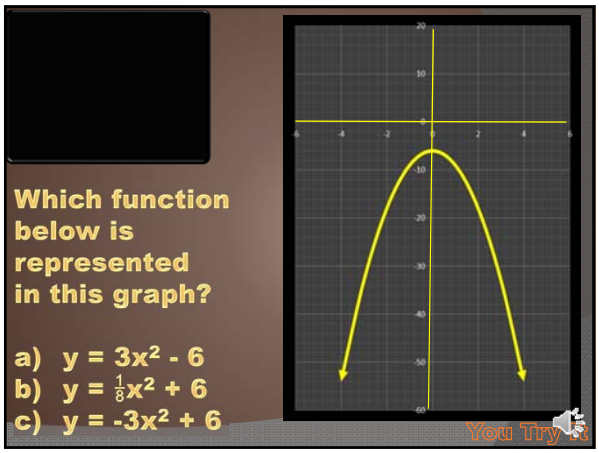

What is the vertex?
(0, -4)
What is the axis of symmetry?
x = 0
You Try It!

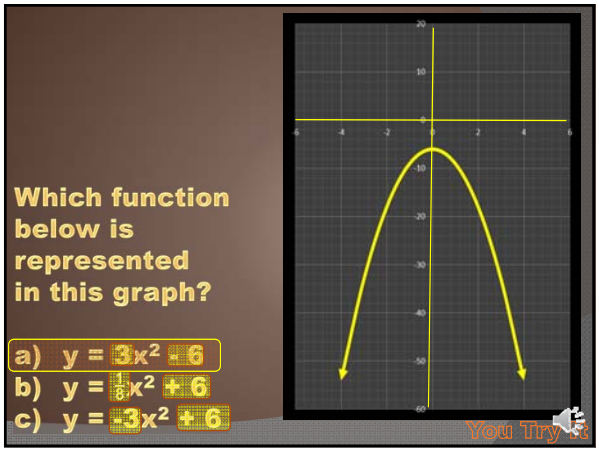

a > 0 → Vertical Stretch
a < 0 → Vertical Shrink
y = x²
y = 3x²
y = ⅓x²
Graph Quadratics: Part 1 – ax² + c

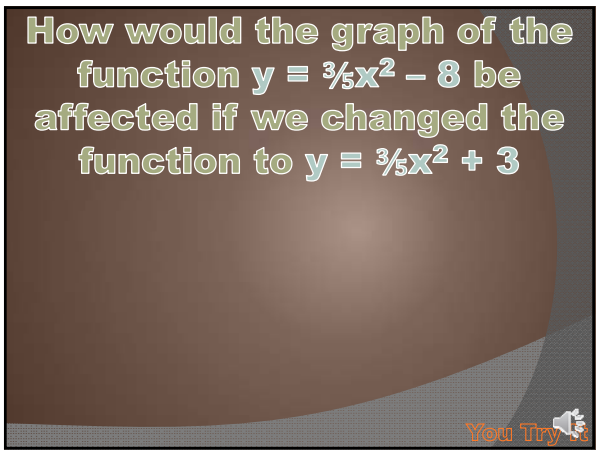

y = -x²
y = -3x²
y = -⅓x²
Graph Quadratics: Part 1 – ax² + c

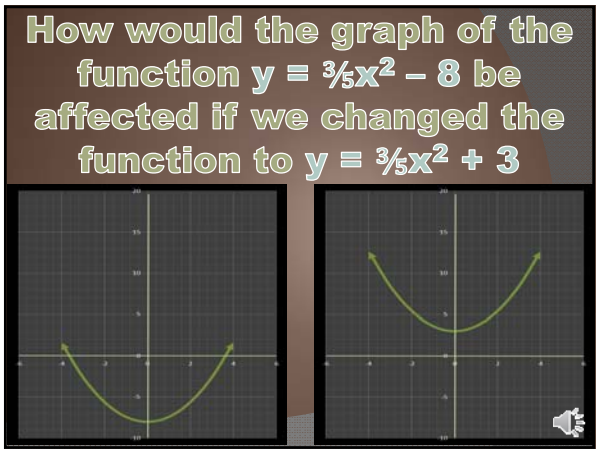

y = x²
y = x² + 3
y = x² - 3
Graph Quadratics: Part 1 – ax² + c

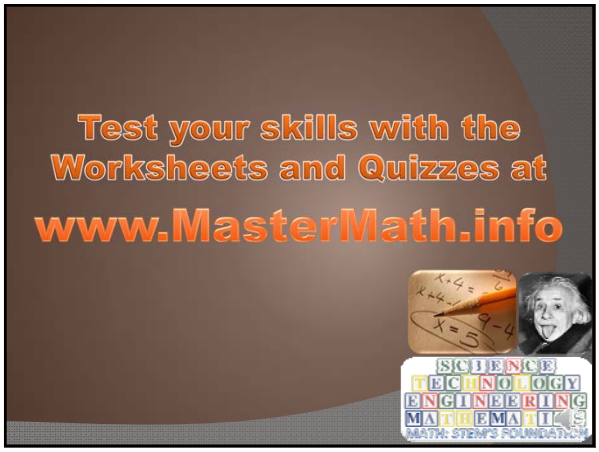

y = ax² + bx + c
a = 1: parent function
a > 1: vertical stretch
: narrower
0 < a < 1: vertical shrink
: wider
a < 0: a reflection in x axis
: opens downward
c > 0: upward vertical translation
: slides up
c < 0: a downward vertical translation
: slides down


Which function below is represented in this graph?
a) y = 3x² - 6
b) y = ⅛x² + 6
c) y = -3x² + 6
You Try It!


Which function below is represented in this graph?
a) y = 3x² - 6
b) y = ⅛x² + 6
c) y = -3x² + 6
You Try It!


How would the graph of the function y = ⅗x² – 8 be affected if we changed the function to y = ⅗x² + 3
You Try It!


How would the graph of the function y = ⅗x² – 8 be affected if we changed the function to y = ⅗x² + 3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