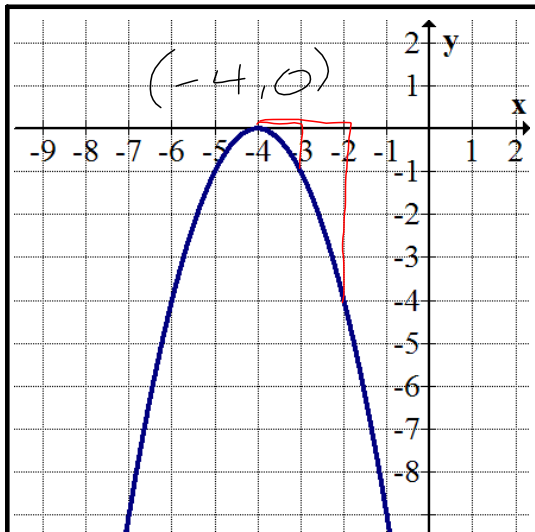
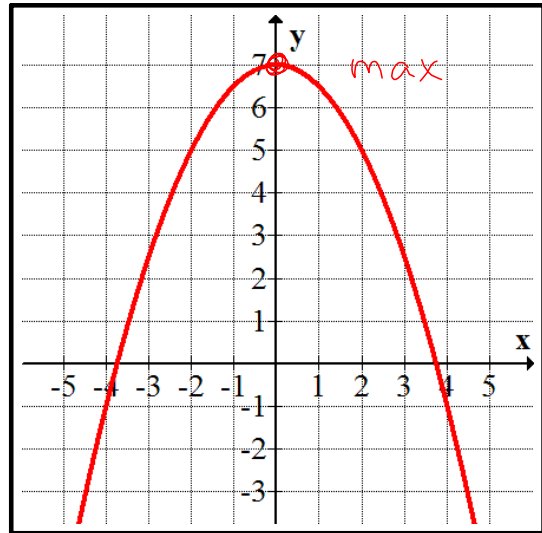
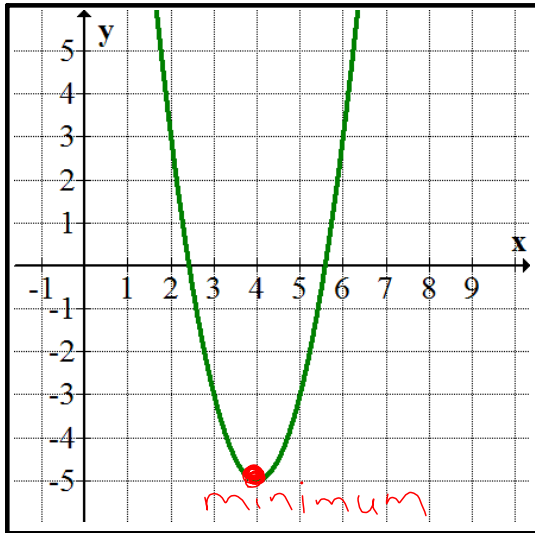


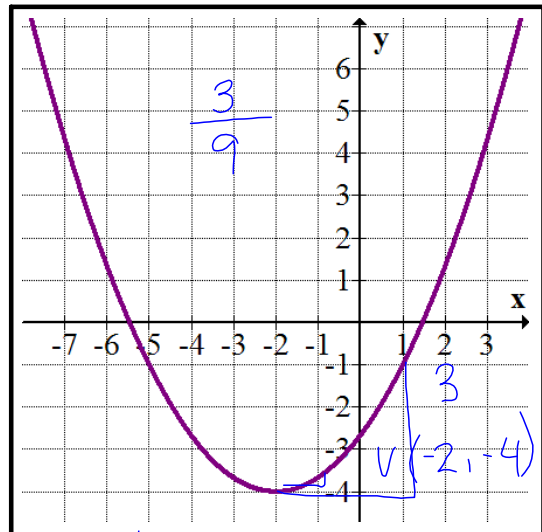
Ex. 3 Write an equation for each parabola.



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

$$a = \frac{2}{3}x^2$$

Compression
by factor
of $\frac{3}{2}$



$$y = \frac{1}{3}(x+2)^2 - 4$$

compressed
by a factor
of 3

Ex. 4 Determine an equation for each quadratic.

a) vertex at $(-3, 4)$ through the point $(-1, -2)$

$$\begin{aligned}y &= a(x-h)^2 + k \\y &= a(x+3)^2 + 4 \\-2 &= a(-1+3)^2 + 4 \\-2 &= a(2)^2 + 4 \\-2 &= 4a + 4 \\-2 - 4 &= 4a \\-6 &= 4a \\ \frac{-6}{4} &= \frac{4a}{4} \\-\frac{3}{2} &= a\end{aligned}$$

$y = -\frac{3}{2}(x+3)^2 + 4$

b) stretch by 4, reflection in x-axis, axis of symmetry at $x=-3$ through the point $(5, 1)$

$a=4$ $h=-3$

$$\begin{aligned}y &= a(x-h)^2 + k \\1 &= -4(5+3)^2 + k \\1 &= -4(8)^2 + k \\1 &= -4(64) + k \\1 &= -256 + k \\257 &= k\end{aligned}$$

$$y = -4(x+3)^2 + 257$$

1. Handout

2. Quiz

Attachments

4s4_Standard.gsp

4s4_Investigation.gsp