

Name: _____

Date: _____

Put each point into the equation to make three equations, then solve them.

① $y = ax^2 + bx + c$ through
 $(-2, 7), (0, 1), (1, 4)$

(1) $c - 2b + 4a = 7$

(2) $c = 1$

(3) $c + b + a = 4$

(4) $[(1) - (2)] \div 2: -b + 2a = 3$

(5) $[(1) - (3)] \div 3: -b + a = 1$

(6) $(4) - (5): a = 2$

$b = 1$

$c = 1$

② $y = ax^2 + bx + c$ through
 $(-2, 2), (0, 2), (3, 32)$

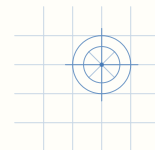
③ $y = ax^2 + bx + c$ through
 $(-2, -2), (2, 6), (4, 22)$

④ $y = ax^2 + bx + c$ through
 $(0, 5), (1, 5), (2, 7)$



Systems of three equations · A parabola through three points

— Answer key



1. $(-2, 7), (0, 1), (1, 4) \rightarrow a = 2, b = 1, c = 1$

2. $(-2, 2), (0, 2), (3, 32) \rightarrow a = 2, b = 4, c = 2$

3. $(-2, -2), (2, 6), (4, 22) \rightarrow a = 1, b = 2, c = -2$

4. $(0, 5), (1, 5), (2, 7) \rightarrow a = 1, b = -1, c = 5$