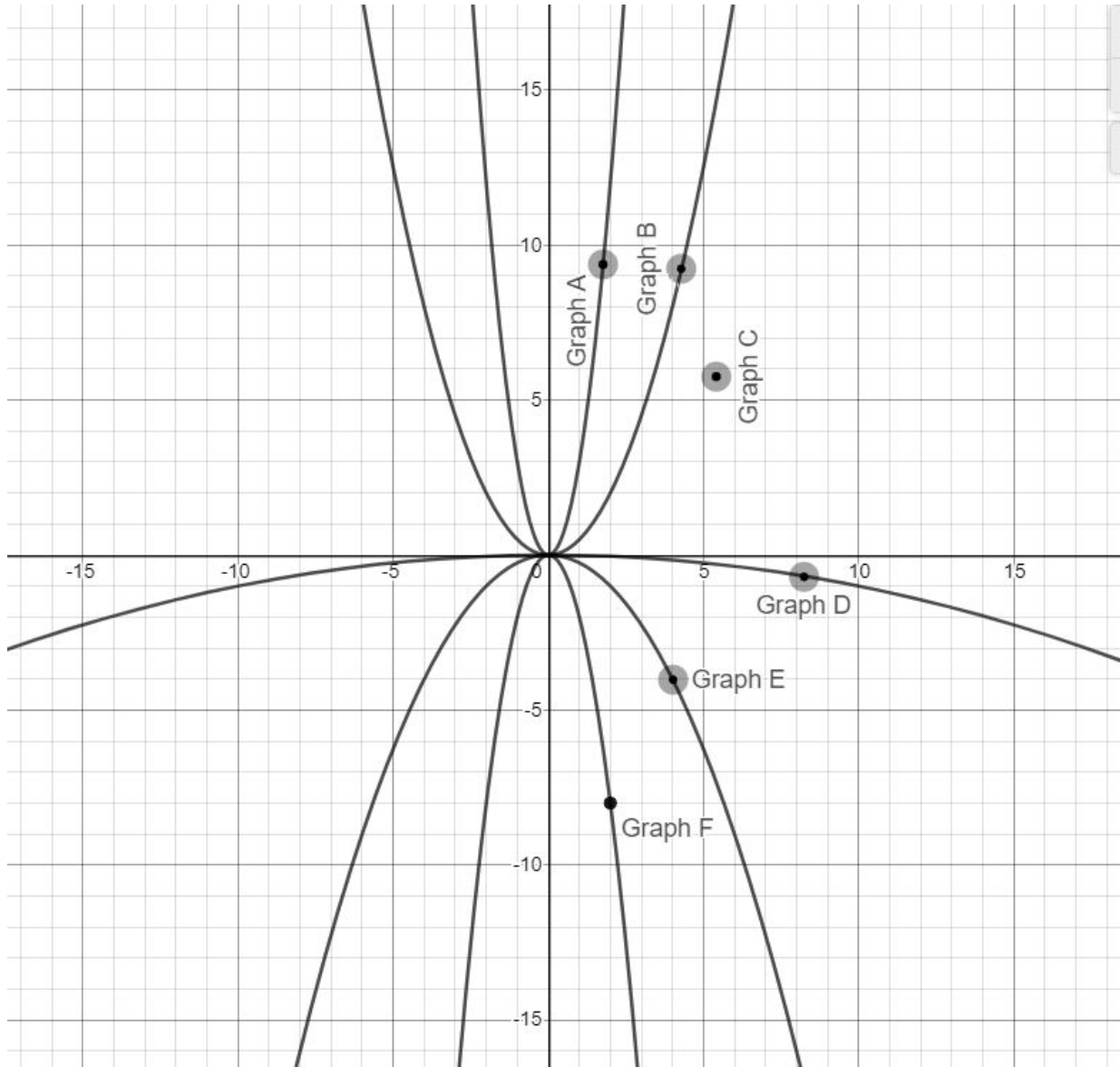


Part I: Match each graph with the corresponding function rule.



Function	Graph
$f(x) = 0.5x^2$	
$f(x) = -2x^2$	
$f(x) = 0.2x^2$	
$f(x) = 3x^2$	
$f(x) = -0.01x^2$	
$f(x) = -0.25x^2$	

Part II: For each quadratic function with a vertex at  $(0, 0)$  find the rule in the form of  $f(x) = ax^2$  by solving for  $a$ .

a) through point  $(-2, 8)$

b) through point  $(-1, 0.3)$

c) through point  $(0.2, -0.12)$

d) through point  $(-0.4, 0.096)$

e) through point  $(-0.2, 0.4)$

f) through point  $(3, -72)$

Part III: Given  $f(x) = -0.25x^2$ , determine each of the following:

a)  $f(-1)$

b)  $f(8)$

c) when  $f(x) = -4$

d)  $f(0)$

e) when  $f(x) = 4$

f) when  $f(x) = -1$

Part IV: Given a 2nd degree polynomial function in the form  $y = ax^2$ , solve for the variable indicated.

a) Solve for  $a$  if  $x = -2$  and  $y = 6$

b) Solve for  $y$  if  $x = -3$  and  $a = 6$

c) Solve for  $x$  if  $a = -2$  and  $y = -32$

d) Solve for  $x$  if  $a = 3$  and  $y = 27$

e) Solve for  $x$  if  $a = -0.3$  and  $y = -30$

f) Solve for  $a$  if  $x = -0.5$  and  $y = -10$