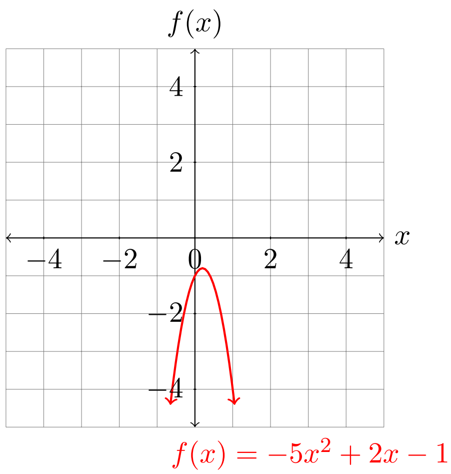
COLLEGE ALGEBRA QUIZ

(1) Use the method of completing the square to determine for $f(x) = -5x^2 + 2x - 1$, (a) the vertex, (b) the axis of symmetry, (c) maximum or minimum value, (d) range

Solution:

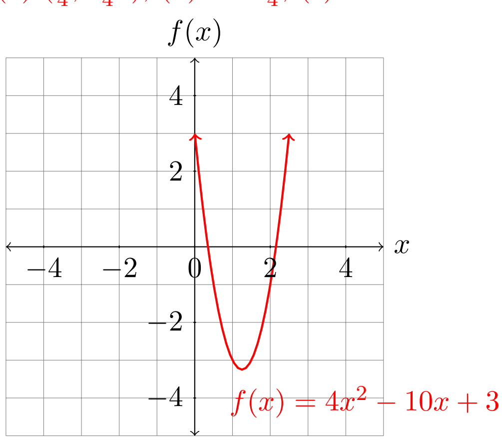
(a) $(\frac{1}{5}, \frac{-4}{5})$, (b) $x = \frac{1}{5}$, (c) maximum value, $\frac{-4}{5}$, (d) range: $(-\infty, \frac{-4}{5}]$



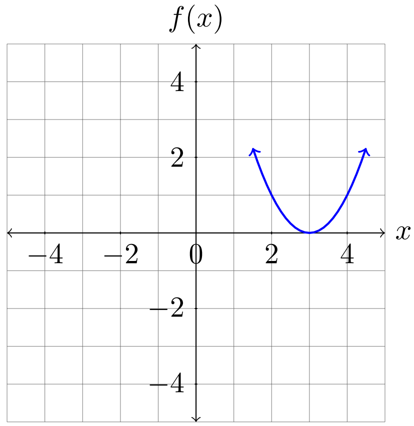
(2) Use the method of completing the square to determine for $f(x) = 4x^2 - 10x + 3$, (a) the vertex, (b) the axis of symmetry, (c) maximum or minimum value, (d) range

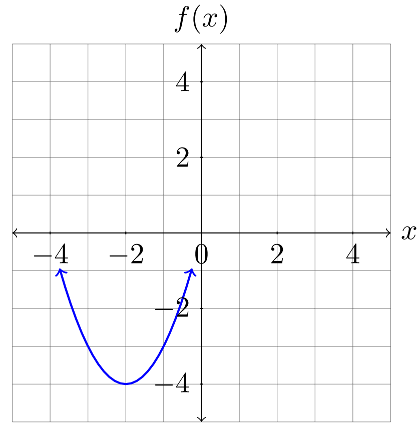
Solution:

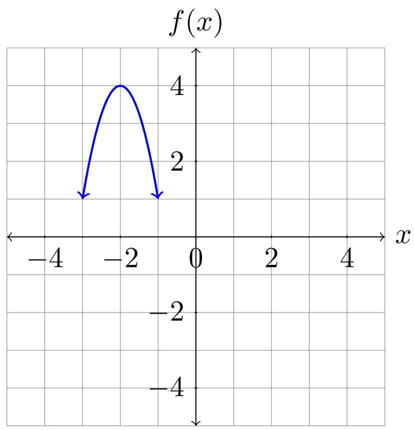
(a) $(\frac{5}{4}, \frac{-13}{4})$, (b) $x = \frac{5}{4}$, (c) minimum value, $\frac{-13}{4}$, (d) range, $[\frac{-13}{4}, \infty)$

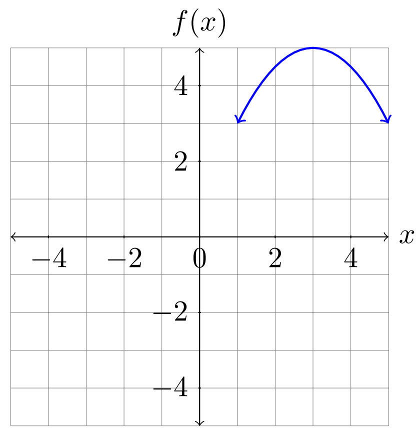


(3) Which of the following graphs correspond to the given equation, $y = (x-3)^2$.

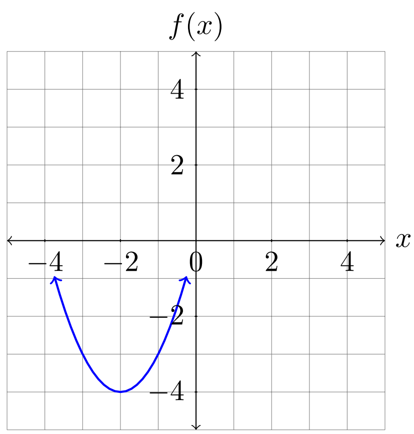
(a)


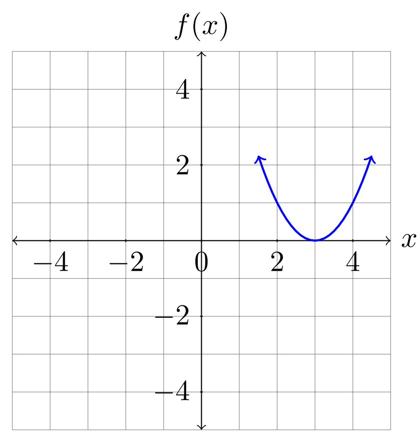
(b)


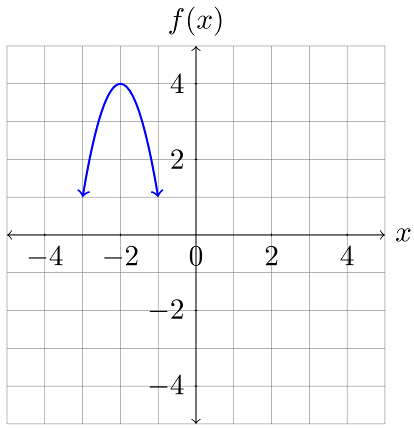
(c)


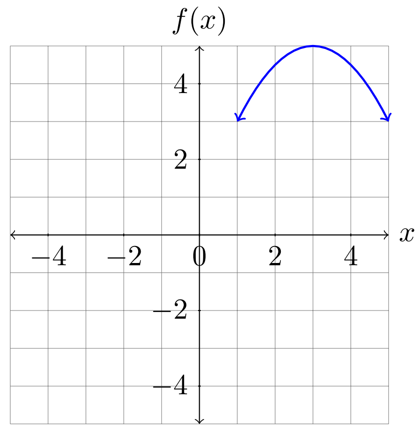
(d)


(4) Which of the following graphs correspond to the given equation, $y = (x+2)^2 - 4$.

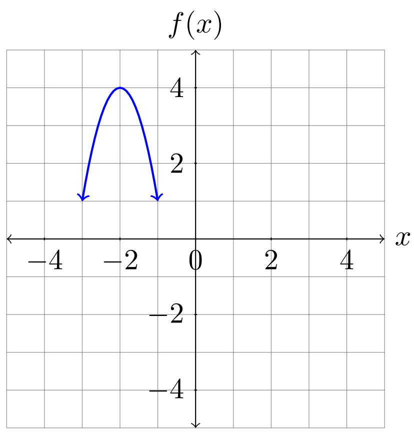
(a)


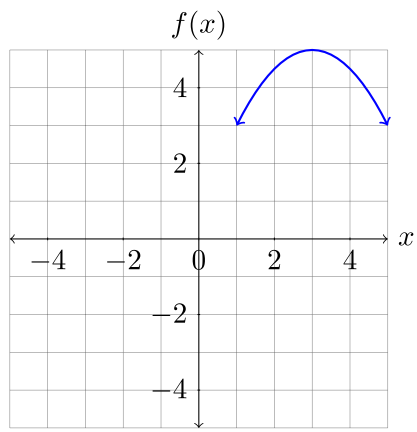
(b)


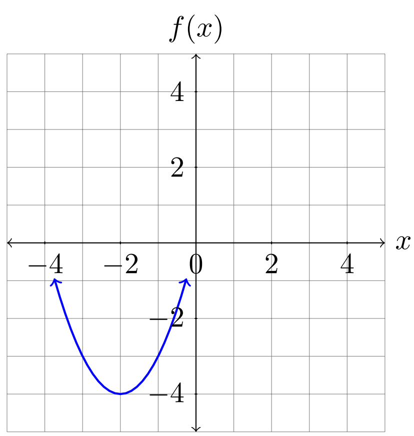
(c) 

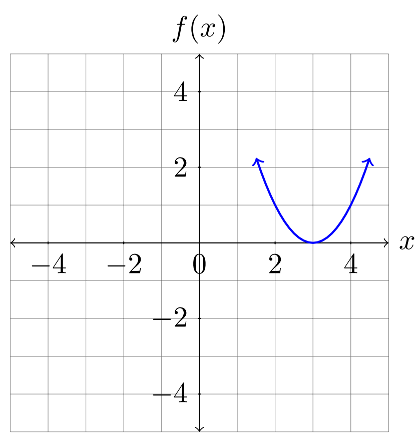
(d) 

(5) Which of the following graphs correspond to the given equation, $y = -3(x+2)^2+4$.

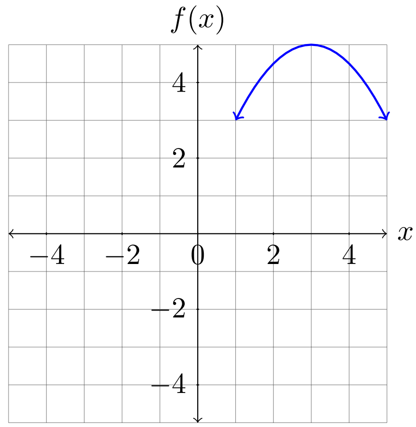
(a) 

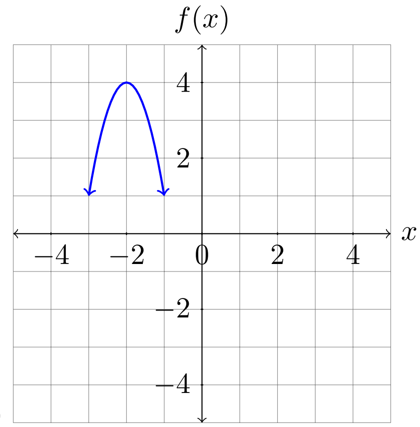
(b) 

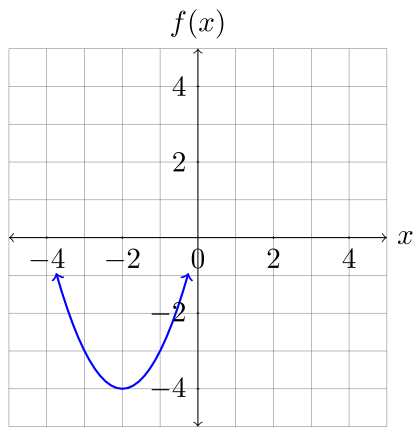
(c) 

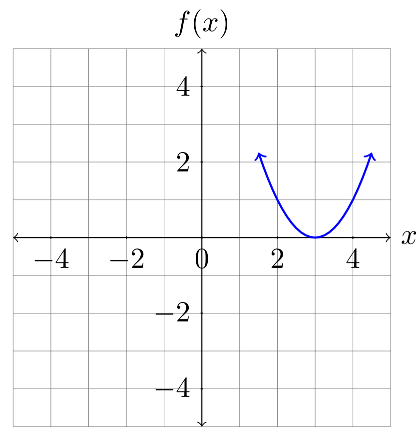
(d) 

(6) Which of the following graphs corresponds to the given equation, $y = \frac{-1}{2}(x-3)^2+5$.

(a)


(b)


(c)


(d)


(7) The Pattons have 72 ft of fencing to build a rectangular cattle corral. If the fencing is 5 ft high, what dimensions would maximize the volume of the corral?
Solution:
18 by 18

(8) Find b such that $f(x) = -5x^2 + bx - 1$ has a maximum value of 7.45.
solution: ± 13