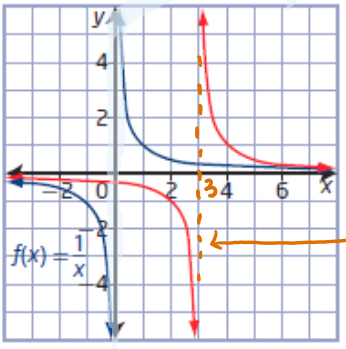
p014_q11

11. The graph of the function drawn in red is a translation of the original function drawn in blue. Write the equation of the translated function in the form $y - k = f(x - h)$.

a)



the asymptote of the blue function: $x = 0$

the asymptote of the red function: $x = 3$

a) original asymptote (vertical): $x = 0$

translated asymptote (—·—): $x = 3$

no vertical change

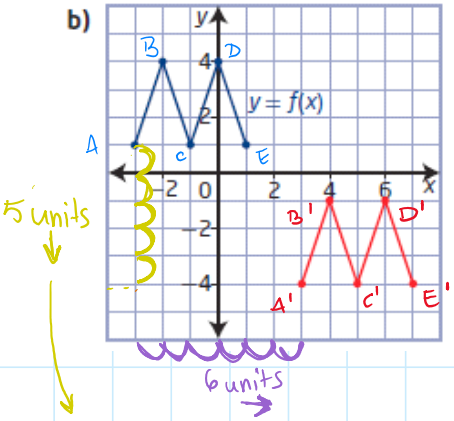
$h = 3$

$k = 0$

Answer: $y = f(x-3)$

=> this is equivalent to a shift of 3 to the right which in the function def. will be: $(x - 3)$

b)



this is a descent of the point A to point A' by 5 units (count them on the graph)

b) vertical change: 5 down

horizontal change: 6 right => becomes $(x - 6)$

$h = 6$

$k = -5$ => $y = f(x-6) - 5$ | +5 both sides

Answer: $y + 5 = f(x-6)$