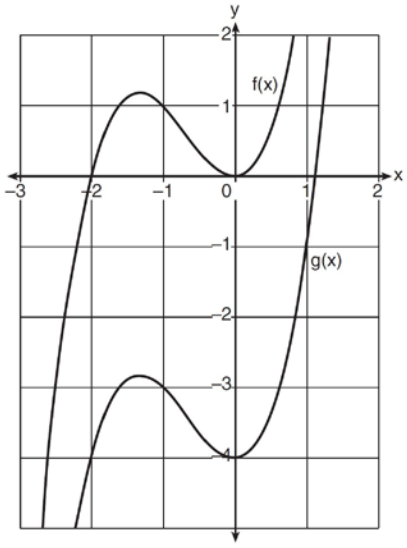
F.BF.B.3: Graphing Polynomial Functions 3

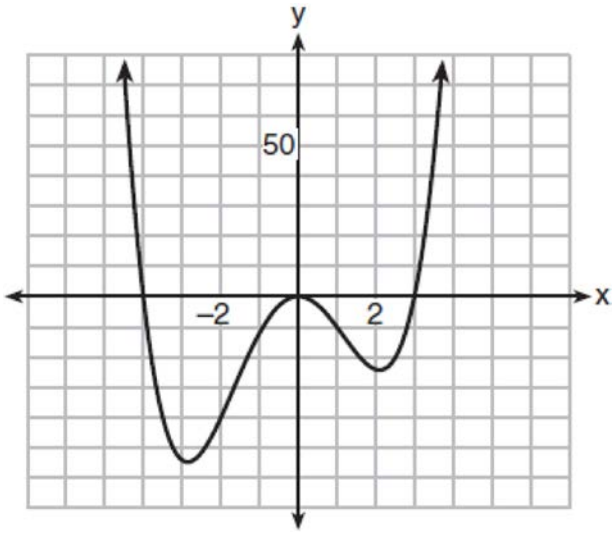
1 Given the parent function $f(x) = x^3$, the function $g(x) = (x-1)^3 - 2$ is the result of a shift of $f(x)$
1) 1 unit left and 2 units down
2) 1 unit left and 2 units up
3) 1 unit right and 2 units down
4) 1 unit right and 2 units up

2 In the diagram below, $f(x) = x^3 + 2x^2$ is graphed. Also graphed is $g(x)$, the result of a translation of $f(x)$.



Determine an equation of $g(x)$. Explain your reasoning.

3 The graph of $y = f(x)$ is shown below. The function has a leading coefficient of 1.



Write an equation for $f(x)$. The function g is formed by translating function f left 2 units. Write an equation for $g(x)$.

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Answer Section

1 ANS: 3 REF: 011910ai

2 ANS:
$g(x) = x^3 + 2x^2 - 4$, because $g(x)$ is a translation down 4 units.

REF: 061632ai

3 ANS:
$f(x) = x^2(x+4)(x-3);\ g(x) = (x+2)^2(x+6)(x-1)$

REF: 011836aii