

Let  $f(x) = 2x^4 + x^3 - 14x^2 + 5x + 6, x \in \mathbb{R}$

- a. For the polynomial equation  $f(x) = 0$ , find the value of
- the sum of the roots
  - the product of the roots
- b. A new polynomial is defined by  $g(x) = f(x - 2)$ .  
Find the sum of the roots of the equation  $g(x) = 0$
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A.  $2x^4 + x^3 - 14x^2 + 5x + 6 = 0$

Sum of roots =  $-\frac{1}{2}$

Product of roots = 3

B.

$y = f(x)$  has 4 roots

$y = g(x) = f(x - 2)$  The graph is translated 2 units to the right.  
Each root is translated 2 units to the right (value increase by 2)

Sum of roots =  $-\frac{1}{2} + 4 \times 2$

**Sum of roots =  $7\frac{1}{2}$**

