Remainder and Factor Theorem

1 What is the remainder when $2005x^5 - 2004x^4 + 2003x - 2002$ is divided by $x - 3$?

A) 1350 B) 1675 C) 5625
D) 6275 E) NOTA

2 Let $f(x) = x^5 + 4x^3 - 6x^2 + 9$. Determine the remainder when $f(x)$ is divided by the factor $(x-1)$.

A) -2 B) 1 C) 8
D) 9 E) NOTA

3 What is the remainder when $9x^{16} - 2x^{13} + 4x^9 - 6x^2 + 2x - 1$ is divided by $(x+1)$?

A) 6 B) 3 C) -1
D) -2 E) NOTA

4 Find all integer roots of $y = 5x^5 + x^4 + 21x^3 + 15x^2 - 98x + 56$

A) $1, -2, \frac{4}{5}$ B) $-1, 2, -\frac{4}{5}$ C) -1,2
D) 1,2 E) NOTA

5 What is the remainder when $3x^3 + 20x^2 + 36$ is divided by $(x+7)$

A) -13 B) 88 C) 2012
D) 2045 E) NOTA

6 What is the remainder when $5x^5 + 3x^4 + 4x^2 + x - 7$ is divided by $x + 1$?

A) -6 B) -2 C) 2
D) 6 E) NOTA

7 What is *k* if the solutions to $0 = 3x^2 + kx - 504$ are –42 and 4?

A) 38 B) 114 C) 342
D) 504 E) NOTA