

Problems to be answered in comment box.

1. What must be added to $x^3 - 3x^2 - 12x + 19$ so that result is exactly divisible by $x^2 + x - 6$?
2. On dividing $f(x) = x^3 - 3x^2 + x + 2$ by a polynomial $g(x)$, the quotient and remainder were $x - 2$ and $-2x + 4$, respectively. Find $g(x)$.
3. On dividing $f(x)$ by a polynomial $x - 1 - x^2$, the quotient $q(x)$ and remainder $r(x)$ are $(x - 2)$ and 3 respectively. Find $f(x)$.
4. On dividing $x^5 - 4x^3 + x^2 + 3x + 1$ by polynomial $g(x)$, the quotient and remainder are $(x^2 - 1)$ and 2 respectively. Find $g(x)$.

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5. For what value of k , $x - 1$ is a factor of $p(x) = kx^2 - 3x + k$?
6. For what value of k , is $y^3 + ky + 2k - 2$ exactly divisible by $(y + 1)$?
7. Find the value of a if $(2y + 3)$ is a factor of $2y^3 + 9y^2 - y - a$.
8. If $x^2 - 1$ is a factor of $ax^4 + bx^3 + cx^2 + dx + e$, Is $a + c + e = b + d = 0$, answer as Yes or No.

Challenging Problems to be answered in comment box

9. The polynomials $kx^3 + 3x^2 - 3$ and $2x^3 - 5x + k$ when divided by $(x - 4)$ leave the same remainder in each case. Find the value of k .
10. When a polynomial $P(x)$ is divided by $x - 2$ and $x - 3$, remainders are 4 and 5 respectively, remainder when $P(x)$ is divided by $(x - 2)(x - 3)$ will be
- (A) 9 (B) 20 (C) $\frac{4}{5}$ (D) $2x + 1$