

Name: _____

Date: _____

1. When $x^3 - 2x + 7$ is divided by the polynomial $D(x)$, the quotient is $x^2 + 3x + 7$ and the remainder is 28. Find $D(x)$.
2. When $x^3 - x + 9$ is divided by the polynomial $D(x)$, the quotient is $x^2 - 2x + 3$ and the remainder is 3. Find $D(x)$.
3. If the expression $x^5 - 3x^3 + 5x^2 - 7x + k$, in which k is a constant, is divided by $x - 2$, the remainder is 22. Find the value of k .
4. Given that $f(x) = kx^3 + 2x^2 + 3x + 6$. Find k such that if $f(x)$ is divided by $x - 2$, the remainder will be 24.
5. If $x - 1$ is a factor of $x^{10} - kx^7 - 3$, find k .
6. If $x - 2$ is a factor of $x^4 - x^3 - mx^2 - 4$, find the value of m .
7. If the expression $x^5 + 2x^2 - k$, in which k is a constant, is divided by $x + 2$, the remainder is zero. Find the value of k .
8. If the polynomial $x^4 - 5x^3 + 5x^2 + kx - 6$ is exactly divisible by $x - 2$, what is the value of k ?
9. If $x - 2$ is a factor of $x^3 + hx + 10$, find the value of h .
10. For what values of k is the polynomial $kx^2 + kx + 20$ exactly divisible by $x - 2$?

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| 1. | |
| Answer: | $x - 3$ |
| Objective: | A.APR.2 |
| 2. | |
| Answer: | $x + 2$ |
| Objective: | A.APR.2 |
| 3. | |
| Answer: | 8 |
| Objective: | A.APR.2 |
| 4. | |
| Answer: | $\frac{1}{2}$ |
| Objective: | A.APR.2 |
| 5. | |
| Answer: | -2 |
| Objective: | A.APR.2 |
| 6. | |
| Answer: | 1 |
| Objective: | A.APR.2 |
| 7. | |
| Answer: | -24 |
| Objective: | A.APR.2 |
| 8. | |
| Answer: | 5 |
| Objective: | A.APR.2 |
| 9. | |
| Answer: | -9 |
| Objective: | A.APR.2 |
| 10. | |
| Answer: | $-\frac{10}{3}$ |
| Objective: | A.APR.2 |