



## Factor Theorem - How to Determine if a Binomial is a Factor

1 Which calculation determines whether  $(x + 2)$  is a factor of  $f(x)$ ?

$$f(x) = x^3 + 3x^2 - 4$$

- |   |             |   |             |
|---|-------------|---|-------------|
| A | $f(0) = 2$  | B | $f(2) = 0$  |
| C | $f(0) = -2$ | D | $f(-2) = 0$ |

2 Which calculation determines whether  $(x - 1)$  is a factor of  $f(x)$ ?

$$f(x) = x^5 + x^4 - 9x^3 - 9x^2$$

- |   |             |   |            |
|---|-------------|---|------------|
| A | $f(-1) = 0$ | B | $f(1) = 0$ |
| C | $f(0) = -1$ | D | $f(0) = 1$ |

$$f(x) = x^5 - 6x^4 + 2x^3 + 48x^2 - 99x + 54$$

Which calculation determines whether  $(x + 1)$  is a factor of  $f(x)$ ?

- |   |            |   |            |   |             |   |             |
|---|------------|---|------------|---|-------------|---|-------------|
| A | $f(0) = 1$ | B | $f(1) = 0$ | C | $f(0) = -1$ | D | $f(-1) = 0$ |
|---|------------|---|------------|---|-------------|---|-------------|

$$f(x) = x^5 + 2x^4 - 6x^3 - 8x^2 + 5x + 6$$

Which calculation determines whether  $(x - 3)$  is a factor of  $f(x)$ ?

- |   |            |   |             |   |            |   |             |
|---|------------|---|-------------|---|------------|---|-------------|
| A | $f(0) = 3$ | B | $f(-3) = 0$ | C | $f(3) = 0$ | D | $f(0) = -3$ |
|---|------------|---|-------------|---|------------|---|-------------|

5 Which calculation determines whether  $(x + 3)$  is a factor of  $f(x)$ ?

$$f(x) = x^4 - 4x^3 + 5x^2 - 2x$$

- |   |             |   |             |
|---|-------------|---|-------------|
| A | $f(3) = 0$  | B | $f(0) = 3$  |
| C | $f(0) = -3$ | D | $f(-3) = 0$ |

$$f(x) = x^5 + x^4 - 3x^3 - x^2 + 2x$$

Which calculation determines whether  $(x - 2)$  is a factor of  $f(x)$ ?

- |   |            |   |            |   |             |   |             |
|---|------------|---|------------|---|-------------|---|-------------|
| A | $f(2) = 0$ | B | $f(0) = 2$ | C | $f(-2) = 0$ | D | $f(0) = -2$ |
|---|------------|---|------------|---|-------------|---|-------------|

7 Which calculation determines whether  $(x - 1)$  is a factor of  $f(x)$ ?

$$f(x) = x^3 + 2x^2 - 9x - 18$$

- |   |            |   |             |
|---|------------|---|-------------|
| A | $f(1) = 0$ | B | $f(-1) = 0$ |
| C | $f(0) = 1$ | D | $f(0) = -1$ |

$$f(x) = x^4 + 3x^3 - 7x^2 - 27x - 18$$

Which calculation determines whether  $(x - 2)$  is a factor of  $f(x)$ ?

- |   |            |   |             |   |            |   |             |
|---|------------|---|-------------|---|------------|---|-------------|
| A | $f(2) = 0$ | B | $f(-2) = 0$ | C | $f(0) = 2$ | D | $f(0) = -2$ |
|---|------------|---|-------------|---|------------|---|-------------|