



Rational Root Theorem - Factors of the Constant

1 $f(x) = 3x^3 + 12x^2 + 15x + 6$

Valid rational roots are in the form p/q where p must be a factor of the constant. What are the factors of the constant in this polynomial?

- | | | | |
|-------------------|-------------|------------|-------------|
| A | B | C | D |
| 1, 2, 3, 4, 6, 12 | 1, 3 | 1, 2, 3, 6 | 1, 3, 5, 15 |

2 Valid rational roots are in the form p/q where p must be a factor of the constant. What are the factors of the constant in this polynomial?

$$f(x) = 2x^3 + 4x^2 - 10x - 12$$

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|---|-------------|---|-------------------|
| A | 1, 2 | B | 1, 2, 3, 4, 6, 12 |
| C | 1, 2, 5, 10 | D | 1, 2, 4 |

3 $f(x) = 2x^3 - 18x^2 + 48x - 32$

Valid rational roots are in the form p/q where p must be a factor of the constant. What are the factors of the constant in this polynomial?

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|-------------|-------------------|--------------------|----------------|
| A | B | C | D |
| 1, 2 | 1, 2, 3, 6, 9, 18 | 1, 2, 4, 8, 16, 32 | 1, 2, 4, 8, 16 |

4 $f(x) = 5x^4 + 25x^3 + 15x^2 - 25x - 20$

Valid rational roots are in the form p/q where p must be a factor of the constant. What are the factors of the constant in this polynomial?

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|-------------|-------------|--------------------|----------|
| A | B | C | D |
| 1, 3, 5, 15 | 1, 5 | 1, 2, 4, 5, 10, 20 | 1, 5, 25 |

5 $f(x) = 4x^4 + 20x^3 + 36x^2 + 28x + 8$

Valid rational roots are in the form p/q where p must be a factor of the constant. What are the factors of the constant in this polynomial?

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|--------------------|-------------------|--------------------|----------------|
| A | B | C | D |
| 1, 2, 4, 5, 10, 20 | 1, 2, 4, 8 | 1, 2, 4, 7, 14, 28 | 1, 2, 4 |

6 Valid rational roots are in the form p/q where p must be a factor of the constant. What are the factors of the constant in this polynomial?

$$f(x) = 2x^3 + 8x^2 + 2x - 12$$

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|---|---------------|---|-------------------|
| A | 1, 2, 3, 4, 6 | B | 1, 2, 3, 4, 6, 12 |
| C | 1, 2 | D | 1, 2, 4, 8 |

7 $f(x) = 2x^5 + 2x^4 - 34x^3 - 34x^2 + 32x + 32$

Valid rational roots are in the form p/q where p must be a factor of the constant. What are the factors of the constant in this polynomial?

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|--------------------|----------------|--------------|-------------|
| A | B | C | D |
| 1, 2, 4, 8, 16, 32 | 1, 2, 4, 8, 16 | 1, 2, 17, 34 | 1, 2 |

8 $f(x) = 2x^3 + 10x^2 + 16x + 8$

Valid rational roots are in the form p/q where p must be a factor of the constant. What are the factors of the constant in this polynomial?

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|-------------|-------------|------------|----------------|
| A | B | C | D |
| 1, 2, 5, 10 | 1, 2 | 1, 2, 4, 8 | 1, 2, 4, 8, 16 |