

$$(2x + 1)(4x - 3)$$

$$8x^2 - 6x + 4x - 3 \quad + 1(4x - 3)$$

$$8x^2 - 2x - 3$$

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$$(p - 4)(2p + 3)$$

$$2p^2 + 3p - 8p - 12$$

$$2p^2 - 5p - 12$$

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$$(2x - 3)(4x + 7)$$

$$8x^2 + 14x - 12x - 21$$

$$8x^2 + 2x - 21$$

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$$(2x - 3)(4x + 7)$$

$$8x^2 + 14x - 12x - 21$$

$$8x^2 + 2x - 21$$

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$$(x + 4)(2x^2 - 8x + 4)$$

$$\cancel{2x^2} - \cancel{8x^2} + 4x + \cancel{8x^2} - 32x + 16$$

$$\underline{2x^3 - 28x + 16}$$

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

$$\underline{18x^3 - 15x^2 + 12x + 12x^2 - 10x + 8}$$

$$18x^3 - 3x^2 + 2x + 8$$

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$6x^2 - 19x + 15$
 $\checkmark (2x-3)(3x-5)$ Trial and error
 $6x^2 - 10x - 9x + 15$
 $6x^2 - 19x + 15$
 90
 $\frac{-10}{6x} \frac{-9}{6x}$
 $\frac{-5}{3x} \frac{-3}{2x}$
 $(3x-5)(2x-3)$ Pull
 $6x^2 - 19x + 15$ Substitution
 90
 $-9 \quad -10$
 $(6x^2 - 9x)(-10x + 15)$ Parenthesis
 $3x(2x-3) - 5(2x-3)$
 $(2x-3)(3x-5)$

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$8x^2 - 30x + 25$
 $(2x-5)(4x-5)$ Factored
 $\left\{ \frac{5}{2}, \frac{5}{4} \right\}$ Zeros, Roots, Solutions, Intercepts
 200
 $\frac{-20}{8x} \quad \frac{-10}{8x}$
 $\frac{-10}{4x}$
 $\frac{-5}{2x} \quad \frac{-5}{4x}$

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$7x^2 - 10x + 3$
 $(x-1)(7x-3)$

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$x^2 - 4 \quad (x-2)(x+2)$
 $x^2 - 16 \quad (x+4)(x-4)$
 $4x^2 - 100 \quad (2x+10)(2x-10)$

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Example
 $3x^4 - 27x^2$
 $3x^2(x^2 - 9)$
 $3x^2(x-3)(x+3)$ Factored
 $\{0, 3, -3\}$

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$3a^2 - 48$
 $3(a^2 - 16)$
 $3(a-4)(a+4)$

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$$36s^2 - 225$$

$$(6s - 15)(6s + 15)$$

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$$4a^2 - 1$$

$$(2a - 1)(2a + 1)$$

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$$x^2 - 64$$

$$x^2 - 81$$

$$25x^2 - 36$$

$$144x^2 - 121$$

$$5n^3 - 20n$$

$$5n(n^2 - 4)$$

$$\underline{5n(n-2)(n+2)}$$

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$$10x^2 - 90$$

$$10(x^2 - 9)$$

$$10(x-3)(x+3)$$

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$$12w^2 - 27$$

$$3(4w^2 - 9)$$

$$3(2w-3)(2w+3)$$

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