

Name:

Date: Score:

Combining Like Terms with Exponents

Simplify each sum by combining like terms

① $(2a^3 - 7a^2) + (3a^2 + 3a^3)$

② $(1 - 5a^4) + (8a^4 + 3)$

③ $(-13k^5 - 6 - 9k) + (3k^5 + 8 + 8k)$

④ $6(4x^2 - 5x + 2) + 3(-8x^2 + 11x + 4)$

Simplify each difference by combining like terms

⑤ $4(6x^3 - 4x^2 + 7x + 1) - 9(4x^3 - 2x^2 - 6x + 1)$

⑥ $10(4x^2 + 8x + 7) - 8(5x^2 + 10x - 9)$

⑦ $3(16x^4 - 16x^3 + 2x^2 - 8x + 24) - 4(8x^4 - 12x^3 - 2x^2 - 4x + 16)$

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Answers

① $(2a^3 - 7a^2) + (3a^2 + 3a^3)$

$$5a^3 - 4a^2$$

② $(1 - 5a^4) + (8a^4 + 3)$

$$4 + 3a^4$$

③ $(-13k^5 - 6 - 9k) + (3k^5 + 8 + 8k)$

$$-10k^5 + 2 - k$$

④ $6(4x^2 - 5x + 2) + 3(-8x^2 + 11x + 4)$

$$3x + 24$$

⑤ $4(6x^3 - 4x^2 + 7x + 1) - 9(4x^3 - 2x^2 - 6x + 1)$

$$-12x^3 + 2x^2 + 82x - 5$$

⑥ $10(4x^2 + 8x + 7) - 8(5x^2 + 10x - 9)$

$$142$$

⑦ $3(16x^4 - 16x^3 + 2x^2 - 8x + 24) - 4(8x^4 - 12x^3 - 2x^2 - 4x + 16)$

$$16x^4 - 14x^2 - 8x + 8$$