

Topic: Adding and subtracting like terms**Question:** Simplify the expression.

$$4x + 2x + 8x - 4x$$

Answer choices:

- A $8x$
- B $4x$
- C $2x$
- D $10x$



Solution: D

For addition and subtraction, like terms are terms whose bases (variables) and exponents are the same. In other words, you can add $2x^2$ and $3x^2$, because they both have base x and an exponent of 2, but you can't add $2x^3$ and $3x^4$, because, while they have the same base x , they have different exponents. Each term in the given expression has base x and an exponent of 1, so we can add all of the coefficients.

$$4x + 2x + 8x - 4x$$

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

$$(6 + 8 - 4)x$$

$$(14 - 4)x$$

$$10x$$



Topic: Adding and subtracting like terms**Question:** Simplify the expression.

$$x + x + 3x + 4x + x$$

Answer choices:

A $8x$

B $7x + x^3$

C $10x$

D $9x$



Solution: C

We can rewrite the given expression $x + x + 3x + 4x + x$ as

$$1x + 1x + 3x + 4x + 1x$$

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

$$(10)x$$

$$10x$$



Topic: Adding and subtracting like terms**Question:** Simplify the expression.

$$2x + 7x + 4x^2 + 6x^2 + 10x$$

Answer choices:

A $10x + 9x^2$

B $19x + 10x^2$

C $-19x + 10x^2$

D $19x - 10x^2$



Solution: B

For addition and subtraction, like terms are terms whose bases (variables) and exponents are the same. In other words, you can add $2x^2$ and $3x^2$, because they both have base x and an exponent of 2, but you can't add $2x^3$ and $3x^4$, because, while they have the same base x , they have different exponents. So we'll group the terms together in this expression that have a matching base and matching exponent.

$$2x + 7x + 4x^2 + 6x^2 + 10x$$

$$(2x + 7x + 10x) + (4x^2 + 6x^2)$$

Then we'll do the addition.

$$(19x) + (10x^2)$$

$$19x + 10x^2$$

