Unit: Algebraic Expansions

Lesson: Expansion Revision

Grade: Nine

ISLAMIC EDUCATIONAL COLLEGE

DATE: 5-Dec-25

SUBJECT: Math

GRADE: 9

UNIT: 1

Lesson: 1

01:00 minute

To expand an expression of the form $a(b + c)$, the term outside the brackets must be multiplied by each term within the brackets

$$a(b + c) \; = \; ab + ac$$

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Expand

$$2x(x - y)$$

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minute

Expand and Simplify

$$6(2s - 3) + 2(s + 2)$$

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minute

To expand an expression of the form
$(a + b)(c + d),$
each term in one pair of brackets must be
multiplied by each term in the other pair of
brackets.
$= ac + ad + bc + bd$

$$(2x + z)(z + x)$$
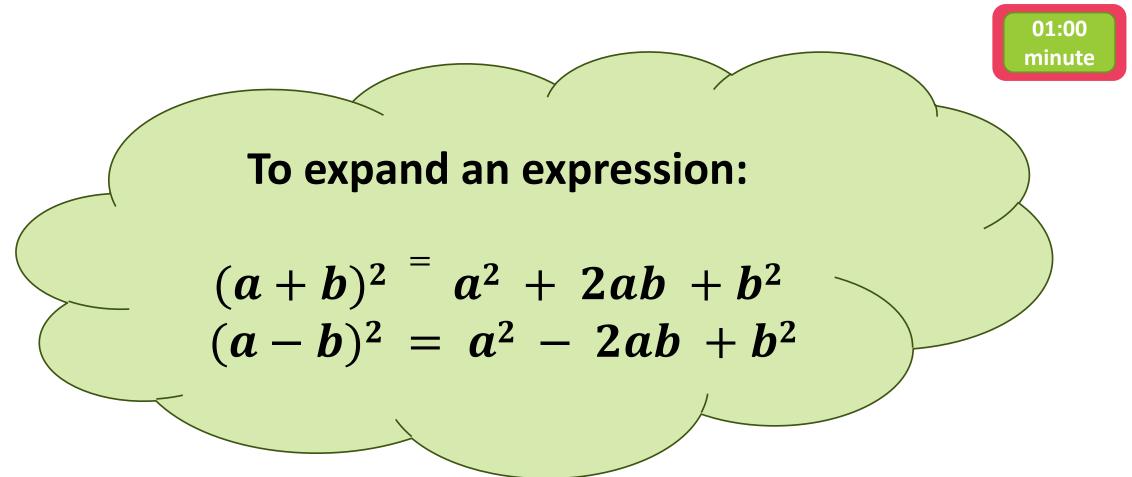
$$(y - 2y)(x - z)$$

01:00
minute

To expand an expression:

$$(a+b)^2 = a^2 + 2ab + b^2$$
$$(a-b)^2 = a^2 - 2ab + b^2$$

01:00 minute

$$(k + 5)^2$$

Random pick

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minute

$$(p - 6)^2$$

Random pick

$$(3x + 7)^2$$

$$(4x - 1)^2$$

RoundRobin

$$(2u + 5)^2$$

$$(3c - 9)^2$$

Expansion of this expression

$$(a + b)(a - b)$$

01:00 minute

Difference of two squares:

a^2 and b^2 ($a^2 - b^2$)

$$(a + b)(a - b)$$

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

$$(1 + 5d)(1 - 5d)$$

Expand this equation:

$$(y^2 - 9)(y^2 + 9)$$

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Factorization

$$ab + ac = a(b + c)$$

Expansion

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$$5x + 5y$$

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$$x^2 - x$$

$$x(x + 2) + 3(x + 2)$$

$$4b - 8c$$

$$9x^2 \ + \ 24x$$

$$yk(2k - 3) \ + \ (2k - 3)$$

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$$14c - 49d$$

$$8a + 12a^2$$

THINK
(Yourself)

PAIR
(With a partner)

SHARE
(Whole class)

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Expansion

$$(a + b)^2 = a^2 + 2ab + b^2$$

Factorization

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$$a^2 + 2a + 1$$

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$$a^2 - 6a + 9$$

$$X^2 + 2xy + y^2$$

$$4X^2 + 4xy + y^2$$

THINK
(Yourself)

PAIR
(With a partner)

SHARE
(Whole class)

$$X^2 + 6xy + 9y^2$$

$$4X^2 + 8xy + 4y^2$$

THINK
(Yourself)

PAIR
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SHARE
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$$4a^2 + 4a + 1$$

$$18x^2 - 24x + 8$$

Factorize the following:

$$x^2 - 4$$

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Factorize the following:

$$64 - a^2$$

Factorize the following:

$$x^2 - 225$$

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Factorize the following:

$$(x-1)^2 - 81$$

$$4m^2 - 25$$

$$2y^2 - 18$$

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Evaluate the following:

$$73^2 - 27^2$$

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$$\sqrt{6.8^2 - 3.2^2}$$

$$\left(\frac{5}{7}\right)^2 - \left(\frac{2}{7}\right)^2$$

Simplify the algebraic expression

$$\frac{6e}{9e^2 f}$$

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$$\frac{18d}{9d^2}$$

$$\frac{27x}{36}$$

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$$\frac{(a-b)^2}{3(a-b)}$$

$$\frac{(x+2)(x-3)}{(x-3)(x+4)}$$

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$$\frac{(x^2+4x)}{(x^2-16)}=$$

$$\frac{8pq}{9r} \times \frac{3r}{4p}$$

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$$\left(\frac{2s}{3t^2}\right)\left(\frac{9st}{16}\right)$$

$$\left(\frac{5r}{12}\right)\left(\frac{3s}{10}\right)$$

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$$\left(\frac{4x}{15z}\right)\left(\frac{3z^2}{8}\right)$$

$$\left(\frac{14x}{5}\right)\left(\frac{10}{7y}\right)$$

01:00 minute

$$\left(\frac{4xy^2}{3s}\right) \times \left(\frac{6s^3}{x^2y}\right)$$

$$\frac{6h}{7} \div \frac{2k}{14}$$

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$$\frac{4ac}{7} \div \frac{16c}{5a}$$

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$$\left(\frac{a(a-b)}{2b}\right) \div \left(\frac{a-3b}{4a}\right)$$

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$$\left(\frac{(2x-3)(2x+3)}{x}\right) \div \left(\frac{2x-3}{x^2}\right)$$

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$$\left(\frac{x+4}{x+5}\right) \div \left(\frac{3x+12}{x^2-25}\right)$$

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$$\frac{d}{3} = -6$$

$$-24u = -4$$

$$-\frac{h}{9} = -8$$

$$10c = -2$$

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$$3m + \frac{1}{5} = \frac{7}{5}$$

$$2p - 0.6 = 4.2$$

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$$4(2x + 5) = 4$$

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$$2(3m - 4) = 5$$

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$$2(3 - a) = 7$$

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$$5(1 - 2v) = -25$$