

**Factor higher-degree polynomials****1**

Which answer is the same expression as this

$$p^2 + 5p - 24$$

A $(5p - 8)(p + 3)$

B $(p - 8)(5p + 3)$

C $(p - 8)(p + 3)$

D $(5p + 8)(p - 3)$

E $(p + 8)(p - 3)$

2

Which answer is the same expression as this

$$12p^2 + 23p + 10$$

A $(4p - 2)(10p + 5)$

B $(3p + 2)(4p + 5)$

3

Find common factors of the first 2 and last 2 terms

$$7x^2 + 14x + 4x + 8$$

A $7x(7x - 2) - 4(7x - 2)$

B $7x(x + 2) + 4(x + 2)$

4

Find common factors of the first 2 and last 2 terms, and solve.

$$24y^2 + 21y + 40y + 35$$

A $(3y - 7)(35y + 5)$

B $(y - 7)(61y + 5)$

C $(3y + 7)(35y + 5)$

D $(61y + 7)(8y + 5)$

E $(8y + 7)(3y + 5)$

5

Is this factoring step correct?

$$\begin{aligned} x^3 - 5x^2 + 8x - 40 \\ = x^2(x - 5) + 8(x - 5) \end{aligned}$$

A
YesB
No**6**

Is this factoring step correct?

$$\begin{aligned} r^2(r - 3) - 25(r - 3) \\ = (r - 3)(r^2 - 25) \end{aligned}$$

A
YesB
No**7**

Consolidate the shared common factor to create 2 binomial factors

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

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

B $(x - 9)(x^2 + 9)$

8

Which answer is the same expression as this

$$n^2(n - 3) - 16(n - 3)$$

A $(n - 3)(n + 4)(n - 4)$

B $(n - 3)(n - 4)(n - 4)$



Factor higher-degree polynomials

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Is this factoring step correct?

$$p^3 - 5p^2 - 16p + 80 \\ = (p - 5)(p^2 - 16)$$

A

Yes

B

No

10

Use grouping to remove a factor from this order 3 polynomial

$$n^3 + 9n^2 + 4n + 36$$

A

$$(n + 9)(n^2 + 4)$$

B

$$(n + 9)(n^2 - 4)$$

11

Is this factoring step correct?

$$m^3 + 7m^2 - 4m - 28 \\ = (m + 7)(m - 2)(m - 2)$$

A

No

B

Yes

12

Is this factoring step correct?

$$(r - 7)(r^2 - 4) \\ = (r - 7)(r + 2)(r - 2)$$

A

Yes

B

No

13

Factor the 2nd order polynomial to give three binomial factors

$$(x + 2)(x^2 - 25)$$

A

$$(x - 2)(x + 5)(x - 5)$$

B

$$(x + 2)(x - 5)(x + 5)$$

14

Is this factoring step correct?

$$81n^4 - 16 \\ = (81n^2 - 4)(n^2 + 4)$$

A

No

B

Yes

15Which calculation determines whether $(x - 3)$ is a factor of $f(x)$?

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

A

$$f(0) = 3$$

B

$$f(-3) = 0$$

C

$$f(3) = 0$$

D

$$f(0) = -3$$

16Is $(x + 2)$ a factor of $f(x)$?

$$f(x) = x^4 + 10x^3 + 37x^2 + 60x + 36$$

A

No

B

Yes



Factor higher-degree polynomials

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Is this factoring step correct?

$$64q^3 + 27$$
$$= (4q + 64)(16q^2 - 12q + 9)$$

A

No

B

Yes

18

Group the terms in pairs and remove a common factor to begin factoring by grouping

$$t^3 - 8t^2 + 2t - 16$$

A

$$t^2(t - 8) + 2(t - 8)$$

B

$$t^2(t - 44) + 12(t - 44)$$

19

Factor this higher order polynomial

$$25x^4 + 20x^2 - 32$$

A

$$(x^2 - 4)(32x^2 + 8)$$

B

$$(5x^2 - 4)(5x^2 + 8)$$

20

Use grouping to factor this order 3 polynomial fully

$$w^3 - 8w^2 - 16w + 128$$

A

$$(w - 8)(w - 4)(w + 4)$$

B

$$(w - 8)(w + 4)(w + 4)$$