

Question ID 1ebf5c78

Assessment	Test	Domain	Skill	Difficulty
PSAT/NMSQT & PSAT 10	Math	Advanced Math	Equivalent expressions	<div><div></div><div></div><div></div></div>

ID: 1ebf5c78

Which expression is equivalent to $\frac{42a}{k} + 42ak$, where $k > 0$?

- A. $\frac{84a}{k}$
- B. $\frac{84ak^2}{k}$
- C. $\frac{42a(k+1)}{k}$
- D. $\frac{42a(k^2+1)}{k}$

Question ID 459712c4

Assessment	Test	Domain	Skill	Difficulty
PSAT/NMSQT & PSAT 10	Math	Advanced Math	Equivalent expressions	<div><div></div><div></div><div></div></div>

ID: 459712c4

One of the factors of $2x^3 + 42x^2 + 208x$ is $x + b$, where b is a positive constant. What is the smallest possible value of b ?

Question ID d1673278

Assessment	Test	Domain	Skill	Difficulty
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ID: d1673278

If $k - x$ is a factor of the expression $-x^2 + \frac{1}{29}nk^2$, where n and k are constants and $k > 0$, what is the value of n ?

- A. -29
- B. $-\frac{1}{29}$
- C. $\frac{1}{29}$
- D. 29

Question ID 0566a3f6

Assessment	Test	Domain	Skill	Difficulty
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ID: 0566a3f6

Which expression represents the product of $(x^{-6}y^3z^5)$ and $(x^4z^5 + y^8z^{-7})$?

- A. $x^{-2}z^{10} + y^{11}z^{-2}$
- B. $x^{-2}z^{10} + x^{-6}z^{-2}$
- C. $x^{-2}y^3z^{10} + y^8z^{-7}$
- D. $x^{-2}y^3z^{10} + x^{-6}y^{11}z^{-2}$

Question ID 72127a15

Assessment	Test	Domain	Skill	Difficulty
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ID: 72127a15

The expression $4x^2 + bx - 45$, where b is a constant, can be rewritten as $(hx + k)(x + j)$, where h , k , and j are integer constants. Which of the following must be an integer?

- A. $\frac{b}{h}$
- B. $\frac{b}{k}$
- C. $\frac{45}{h}$
- D. $\frac{45}{k}$

Question ID 8eafb55

Assessment	Test	Domain	Skill	Difficulty
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ID: 8eafb55

$$\begin{aligned}g(x) &= \frac{3}{5}x + \frac{7}{6} \\ h(x) &= 6x - 5\end{aligned}$$

The functions g and h are defined by the equations shown. Which expression is equivalent to $g(x) \cdot h(x)$?

- A. $\frac{18x^2}{5} - \frac{35}{6}$
- B. $\frac{18x^2}{5} + \frac{27x}{11} - \frac{35}{6}$
- C. $\frac{18x^2}{5} - 4x - \frac{35}{6}$
- D. $\frac{18x^2}{5} + 4x - \frac{35}{6}$

Question ID 91570fae

Assessment	Test	Domain	Skill	Difficulty
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ID: 91570fae

The expression $(3x - 23)(19x + 6)$ is equivalent to the expression $ax^2 + bx + c$, where a , b , and c are constants. What is the value of b ?

Question ID 9f39eced

Assessment	Test	Domain	Skill	Difficulty
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ID: 9f39eced

Which expression is equivalent to $6x^8y^2 + 12x^2y^2$?

- A. $6x^2y^2(2x^6)$
- B. $6x^2y^2(x^4)$
- C. $6x^2y^2(x^6 + 2)$
- D. $6x^2y^2(x^4 + 2)$

Question ID 6955a2ac

Assessment	Test	Domain	Skill	Difficulty
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ID: 6955a2ac

$$(5x^3 - 3) - (-4x^3 + 8)$$

The given expression is equivalent to $bx^3 - 11$, where b is a constant. What is the value of b ?

Question ID bee2bb22

Assessment	Test	Domain	Skill	Difficulty
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ID: bee2bb22

Which of the following expressions is(are) a factor of $3x^2 + 20x - 63$?

I. $x - 9$

II. $3x - 7$

- A. I only
- B. II only
- C. I and II
- D. Neither I nor II

Question ID d699d0b2

Assessment	Test	Domain	Skill	Difficulty
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ID: d699d0b2

If $4^{8c} = \sqrt[3]{4^7}$, what is the value of c ?

Question ID 4bde993d

Assessment	Test	Domain	Skill	Difficulty
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ID: 4bde993d

$0.36x^2 + 0.63x + 1.17$

The given expression can be rewritten as $a(4x^2 + 7x + 13)$, where a is a constant. What is the value of a ?