

Question ID 7f4b32e1

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Advanced Math	Equivalent expressions	Medium

ID: 7f4b32e1

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

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 bc68d9f9

Assessment	Test	Domain	Skill	Difficulty
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ID: bc68d9f9

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 eb385faa

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Advanced Math	Equivalent expressions	Medium

ID: eb385faa

Which expression is equivalent to $(7x^3 + 7x) - (6x^3 - 3x)$?

- A. $x^3 + 10x$
- B. $-13x^3 + 10x$
- C. $-13x^3 + 4x$
- D. $x^3 + 4x$

Question ID 219a57aa

Assessment	Test	Domain	Skill	Difficulty
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ID: 219a57aa

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 5e61ba73

Assessment	Test	Domain	Skill	Difficulty
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ID: 5e61ba73

The expression $90y^5 - 54y^4$ is equivalent to $ry^4(15y - 9)$, where r is a constant. What is the value of r ?

Question ID 01264050

Assessment	Test	Domain	Skill	Difficulty
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ID: 01264050

Which expression is equivalent to $(d - 6)(8d^2 - 3)$?

- A. $8d^3 - 14d^2 - 3d + 18$
- B. $8d^3 - 17d^2 + 48$
- C. $8d^3 - 48d^2 - 3d + 18$
- D. $8d^3 - 51d^2 + 48$

Question ID 581be4a1

Assessment	Test	Domain	Skill	Difficulty
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ID: 581be4a1

Which of the following expressions is equivalent to $8x^{10} - 8x^9 + 88x$?

- A. $x(7x^{10} - 7x^9 + 87x)$
- B. $x(8^{10} - 8^9 + 88)$
- C. $8x(x^{10} - x^9 + 11x)$
- D. $8x(x^9 - x^8 + 11)$

Question ID 3a7aa34d

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Advanced Math	Equivalent expressions	Medium

ID: 3a7aa34d

Which expression is equivalent to $a^{\frac{11}{12}}$, where $a > 0$?

- A. $\sqrt[12]{a^{132}}$
- B. $\sqrt[144]{a^{132}}$
- C. $\sqrt[121]{a^{132}}$
- D. $\sqrt[11]{a^{132}}$

Question ID a351b98d

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Advanced Math	Equivalent expressions	Medium

ID: a351b98d

The expression $\frac{24}{6x+42}$ is equivalent to $\frac{4}{x+b}$, where b is a constant and $x > 0$. What is the value of b ?

- A. 7
- B. 10
- C. 24
- D. 252

Question ID 5883daba

Assessment	Test	Domain	Skill	Difficulty
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ID: 5883daba

Which expression is equivalent to $(8x^3 + 8) - (x^3 - 2)$?

- A. $8x^3 + 6$
- B. $7x^3 + 10$
- C. $8x^3 + 10$
- D. $7x^3 + 6$

Question ID 27b93ec4

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Advanced Math	Equivalent expressions	Medium

ID: 27b93ec4

Which expression is equivalent to $(x^2 + 11)^2 + (x - 5)(x + 5)$?

- A. $x^4 + 23x^2 - 14$
- B. $x^4 + 23x^2 + 96$
- C. $x^4 + 12x^2 + 121$
- D. $x^4 + x^2 + 146$

Question ID ce53810c

Assessment	Test	Domain	Skill	Difficulty
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ID: ce53810c

Which expression is equivalent to $\frac{h^{15}q^7}{h^5q^{21}}$, where $h > 0$ and $q > 0$?

- A. $\frac{h^{10}}{q^{14}}$
- B. $\frac{h^3}{q^3}$
- C. $h^{10}q^{14}$
- D. h^3q^3

Question ID f8a698f7

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Advanced Math	Equivalent expressions	Medium

ID: f8a698f7

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

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

Question ID 91f6f890

Assessment	Test	Domain	Skill	Difficulty
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ID: 91f6f890

Which expression is equivalent to $\sqrt[7]{x^9y^9}$, where x and y are positive?

- A. $(xy)^{\frac{7}{9}}$
- B. $(xy)^{\frac{9}{7}}$
- C. $(xy)^{16}$
- D. $(xy)^{63}$

Question ID a65952d9

Assessment	Test	Domain	Skill	Difficulty
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ID: a65952d9

Which expression is equivalent to $\frac{8x(x-7)-3(x-7)}{2x-14}$, where $x > 7$?

- A. $\frac{x-7}{5}$
- B. $\frac{8x-3}{2}$
- C. $\frac{8x^2-3x-14}{2x-14}$
- D. $\frac{8x^2-3x-77}{2x-14}$

Question ID aeef182c

Assessment	Test	Domain	Skill	Difficulty
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ID: aeef182c

$$\begin{aligned}f(x) &= x^2 + bx \\ g(x) &= 9x^2 - 27x\end{aligned}$$

Functions f and g are given, and in function f , b is a constant. If $f(x) \cdot g(x) = 9x^4 - 26x^3 - 3x^2$, what is the value of b ?

- A. -26
- B. $-\frac{26}{9}$
- C. $\frac{1}{9}$
- D. 9