Question ID 7f4b32e1

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

$$g(x) = \tfrac{3}{5}x + \tfrac{7}{6}$$
$$h(x) = 6x - 5$$

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
SAT	Math	Advanced Math	Equivalent expressions	Medium

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

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

A. $x^3 + 10x$

B. $-13x^3 + 10x$

C. $-13x^3 + 4x$

D. $x^3 + 4x$

Question ID 219a57aa

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

ID: 219a57aa

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

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
SAT	Math	Advanced Math	Equivalent expressions	Medium

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
SAT	Math	Advanced Math	Equivalent expressions	Medium

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
SAT	Math	Advanced Math	Equivalent expressions	Medium

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

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
SAT	Math	Advanced Math	Equivalent expressions	Medium

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 $\left(x^2 + 11\right)^2 + (x - 5)(x + 5)$?

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
SAT	Math	Advanced Math	Equivalent expressions	Medium

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

$$\left(5x^3 - 3\right) - \left(-4x^3 + 8\right)$$

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
SAT	Math	Advanced Math	Equivalent expressions	Medium

ID: 91f6f890

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

A. msup

B. msup

C. msup

D. msup

Question ID aeef182c

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

$$f(x) = x^2 + bx$$
$$g(x) = 9x^2 - 27x$$

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

Question ID a65952d9

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

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. $\frac{8x^2-3x-77}{2x-14}$