Question ID 5822c232

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

ID: 5822c232

Which expression is equivalent to $\frac{y+12}{x-8} + \frac{y(x-8)}{x^2y-8xy}$?

A. $\frac{xy+y+4}{x^3y-16x^2y+64xy}$

B. $\frac{xy+9y+12}{x^2y-8xy+x-8}$

C. $\frac{xy^2+13xy-8y}{x^2y-8xy}$

D. $\frac{xy^2+13xy-8y}{x^3y-16x^2y+64xy}$

Question ID 4443355f

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

ID: 4443355f

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 a1397504

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

ID: a1397504

$$0.36x^2 + 0.63x + 1.17$$

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

Question ID eafd61d3

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

ID: eafd61d3

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 68fb4847

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

ID: 68fb4847

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 ec3981ea

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

ID: ec3981ea

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 9d146dca

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

ID: 9d146dca

Which of the following expressions has a factor of $x + 2b$, where b is a positive integer constant?

A. $3x^2 + 7x + 14b$

B. $3x^2 + 28x + 14b$

C. $3x^2 + 42x + 14b$

D. $3x^2 + 49x + 14b$

Question ID 05cec180

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

ID: 05cec180

Which expression is equivalent to $\frac{4}{4x-5} - \frac{1}{x+1}$?

A. $\frac{1}{(x+1)(4x-5)}$

B. $\frac{3}{3x-6}$

C. $-\frac{1}{(x+1)(4x-5)}$

D. $\frac{9}{(x+1)(4x-5)}$

Question ID fead0fc7

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

ID: fead0fc7

The expression $6\sqrt[5]{3^5x^{45}} \cdot \sqrt[8]{2^8x}$ is equivalent to ax^b, where a and b are positive constants and $x > 1$. What is the value of $a + b$?

Question ID 3138e379

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

ID: 3138e379

$$\sqrt[5]{70n}\left(\sqrt[6]{70n}\right)^2$$

For what value of x is the given expression equivalent to $(70n)^{30x}$, where $n > 1$?

Question ID 6b56736a

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

ID: 6b56736a

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 ab245384

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

ID: ab245384

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

Question ID bcbf0e45

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

ID: bcbf0e45

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?