

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. $\frac{xy+9y+12}{x^2y-8xy+7-8}$
- ~~C. $\frac{xy^2+13xy-8y}{x^2y-8xy}$~~
- D. $\frac{xy^2+13xy-8y}{x^3y-16x^2y+64xy}$

แทนค่า อางาน

$$\frac{y+12}{x-8} + \frac{y(x-8)}{xy(x-8)}$$
$$\frac{xy^2+12xy+xy-8y}{x^2y-8xy} \rightarrow \text{ตอบได้เลย}$$
$$= \frac{xy^2+13xy-8y}{x^2y-8xy} //$$

จริงถึง y ได้อีก

Question ID 4443355f

Assessment	Test	Domain	Skill	Difficulty
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ID: 4443355f

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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. $\frac{45}{k}$~~

$\left. \begin{array}{l} \text{A. } \frac{b}{h} \\ \text{B. } \frac{b}{k} \end{array} \right\} \text{ "2"} \text{ "3"}$
$$kj = -45 \rightarrow k = \frac{-45}{j}$$
$$\rightarrow k + jh = b$$
$$h = 4$$
$$k + 4j = b$$

$$\rightarrow 45 \div k = 45 \div \frac{-45}{j}$$
$$= 45 \times \frac{j}{-45}$$
$$= \underline{-j} \checkmark$$

Question ID a1397504

Assessment	Test	Domain	Skill	Difficulty
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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
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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
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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. $\frac{42a(k^2+1)}{k}$

$$\begin{aligned} &= \frac{42a + 42ak^2}{k} \\ &= \frac{42a(1+k^2)}{k} // \end{aligned}$$

Question ID ec3981ea

Assessment	Test	Domain	Skill	Difficulty
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ID: ec3981ea

$k - x = 0$
 $x = k$

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~~

แทน $x = k \rightarrow$ สมการจะได้ 0
ตาม Remainder Theory

$-k^2 + \frac{1}{29}nk^2 = 0$
 $\frac{1}{29}n\cancel{k^2} = \cancel{k^2}$
 $\frac{1}{29}n = 1$
 $n = 29 //$

Question ID 9d146dca

Assessment	Test	Domain	Skill	Difficulty
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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. $3x^2 + 49x + 14b$~~

$x + 2b = 0$
แทน $x = -2b$ ในสมการต้อง = 0
ทั้ง

แยก factor ทั่ว

แทน $x = 2$ และ $b = 3$ ทั่วว่า
 $x + 2b = 8$
A. 68 X
B. 110 X
C. 138 X
D. 152 ✓ ทั่วลงทั่ว

Question ID 05cec180

Assessment	Test	Domain	Skill	Difficulty
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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.~~ $\frac{9}{(x+1)(4x-5)}$

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

$$= \frac{\textcircled{9} \leftarrow \text{ผลลัพธ์}}{(4x-5)(x+1)} //$$

Question ID fead0fc7

Assessment	Test	Domain	Skill	Difficulty
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ID: fead0fc7

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

$$\begin{aligned} a &= 6 \left(3^{\frac{5}{5}} \right) \left(2^{\frac{8}{8}} \right) \\ &= 36 \\ x^{\frac{45}{5}} \cdot x^{\frac{1}{8}} &= x^{\frac{73}{8}} \\ b &= \frac{73}{8} \\ a + b &= 36 + \frac{73}{8} \\ &= \frac{361}{8} \text{ or } 45.125 \\ &\quad // \qquad // \end{aligned}$$

Question ID 3138e379

Assessment	Test	Domain	Skill	Difficulty
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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
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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

แทน $x = 2$
ในสมการจะง่ายกว่า $\rightarrow -11$
i $-7 \times$
ii $-1 \checkmark$

แยก factor ง่ายกว่า
 $(3x - 7)(x + 9) = 0$

Question ID ab245384

Assessment	Test	Domain	Skill	Difficulty
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ID: ab245384



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

Question ID bcbf0e45

Assessment	Test	Domain	Skill	Difficulty
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ID: bcbf0e45

Remainder Theory

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 ?

$$x + b = 0$$

แทน $x = -b$ ในสมการ

$$2(-b^3) + 42(-b)^2 + 208(-b) = 0$$
$$-2b^3 + 42b^2 - 208b = 0$$

Desmos $\rightarrow b = \cancel{0}, 8, 13$