Question Bank

Math

Visit mocksatexam.online to download more free question banks

Equivalent Expressions

MockSATExam.online

Question ID e312081b

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Advanced Math	Equivalent expressions	■□□

ID: e312081b

$(x+5)+(2x-3)$

Which of the following is equivalent to the given expression?

A. $3x-2$

B. $3x+2$

C. $3x-8$

D. $3x+8$

Question ID 1d3fee25

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Advanced Math	Equivalent expressions	■□□

ID: 1d3fee25

Which of the following is equivalent to $3(x+5)-6$?

A. $3x-3$

B. $3x-1$

C. $3x+9$

D. $15x-6$

Question ID 60fdb4d4

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Advanced Math	Equivalent expressions	■□□

ID: 60fdb4d4

Which expression is equivalent to $(2x^2-4)-(-3x^2+2x-7)$?

A. $5x^2-2x+3$

B. $5x^2+2x-3$

C. $-x^2-2x-11$

D. $-x^2+2x-11$

Question ID 49efde89

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Advanced Math	Equivalent expressions	■□□

ID: 49efde89

The expression $2x^2 + ax$ is equivalent to $x(2x + 7)$ for some constant a. What is the value of a ?

A. 2

B. 3

C. 4

D. 7

Question ID 9ed9f54d

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Advanced Math	Equivalent expressions	■□□

ID: 9ed9f54d

Which of the following is equivalent to $2(x^2-x)+3(x^2-x)$?

A. $5x^2-5x$

B. $5x^2+5x$

C. $5x$

D. $5x^2$

Question ID 294db8ec

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Advanced Math	Equivalent expressions	■□□

ID: 294db8ec

Which of the following is equivalent to $2x^3+4$?

A. $4(x^3+4)$

B. $4(x^3+2)$

C. $2(x^3+4)$

D. $2(x^3+2)$

Question ID 6e06a0a7

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Advanced Math	Equivalent expressions	■□□

ID: 6e06a0a7

Which of the following expressions is equivalent to $2a^2(a+3)$?

A. $5a^3$

B. $8a^5$

C. $2a^3+3$

D. $2a^3+6a^2$

Question ID df0ef054

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Advanced Math	Equivalent expressions	■□□

ID: df0ef054

$(2x^3+3x)(x^3-2x)$

Which of the following is equivalent to the expression above?

A. x^3+5x

B. $3x^3+x$

C. $2x^6-x^4-6x^2$

D. $3x^6-x^4-6x^2$

Question ID 127b2759

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Advanced Math	Equivalent expressions	■□□

ID: 127b2759

Which expression is equivalent to $8 + d^2 + 3$?

A. $d^2 + 24$

B. $d^2 + 11$

C. $d^2 + 5$

D. $d^2 - 11$

Question ID fb96a5b3

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Advanced Math	Equivalent expressions	■□□

ID: fb96a5b3

Which of the following expressions is equivalent to $2(ab-3)+2$?

A. $2ab-1$

B. $2ab-4$

C. $2ab-5$

D. $2ab-8$

Question ID e597050f

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Advanced Math	Equivalent expressions	■□□

ID: e597050f

Which expression is equivalent to $9x + 6x + 2y + 3y$?

A. $3x + 5y$

B. $6x + 8y$

C. $12x + 8y$

D. $15x + 5y$

Question ID 1e8d7183

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Advanced Math	Equivalent expressions	■□□

ID: 1e8d7183

Which expression is equivalent to $256w^2 - 676$?

A. $(16w - 26)(16w - 26)$

B. $(8w - 13)(8w + 13)$

C. $(8w - 13)(8w - 13)$

D. $(16w - 26)(16w + 26)$

Question ID 0354c7de

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Advanced Math	Equivalent expressions	■□□

ID: 0354c7de

$5x+15$

Which of the following is equivalent to the given expression?

A. $5(x+3)$

B. $5(x+10)$

C. $5(x+15)$

D. $5(x+20)$

Question ID 974d33dc

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Advanced Math	Equivalent expressions	■□□

ID: 974d33dc

Which of the following expressions is equivalent to the sum of (r^3+5r^2+7) and $(r^2+8r+12)$?

A. r^5+13r^3+19

B. $2r^3+13r^2+19$

C. $r^3+5r^2+7r+12$

D. $r^3+6r^2+8r+19$

Question ID d4d513ff

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Advanced Math	Equivalent expressions	■□□

ID: d4d513ff

Which expression is equivalent to $12x + 27$?

A. $12(9x + 1)$

B. $27(12x + 1)$

C. $3(4x + 9)$

D. $3(9x + 24)$

Question ID dd4ab4c4

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Advanced Math	Equivalent expressions	■■□

ID: dd4ab4c4

$4a^2+20ab+25b^2$

Which of the following is a factor of the polynomial above?

A. $a+b$

B. $2a+5b$

C. $4a+5b$

D. $4a+25b$

Question ID b8caaf84

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Advanced Math	Equivalent expressions	■■□

ID: b8caaf84

If $p = 3x + 4$ and $v = x + 5$, which of the following is equivalent to $pv - 2p + v$?

A. $3x^2 + 12x + 7$

B. $3x^2 + 14x + 17$

C. $3x^2 + 19x + 20$

D. $3x^2 + 26x + 33$

Question ID ad2ec615

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Advanced Math	Equivalent expressions	■■□

ID: ad2ec615

Which of the following is equivalent to the expression $x^4 - x^2 - 6$?

A. $(x^2+1)(x^2-6)$

B. $(x^2+2)(x^2-3)$

C. $(x^2+3)(x^2-2)$

D. $(x^2+6)(x^2-1)$

Question ID 42c71eb5

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Advanced Math	Equivalent expressions	■■□

ID: 42c71eb5

$(2x+5)^2-(x-2)+2(x+3)$

Which of the following is equivalent to the expression above?

A. $4x^2+21x+33$

B. $4x^2+21x+29$

C. $4x^2+x+29$

D. $4x^2+x+33$

Question ID a05bd3a4

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Advanced Math	Equivalent expressions	■■□

ID: a05bd3a4

Which of the following expressions is equivalent to x^2-5 ?

A. $(x+\sqrt{5})^2$

B. $(x-\sqrt{5})^2$

C. $(x+\sqrt{5})(x-\sqrt{5})$

D. $(x+5)(x-1)$

Question ID cc776a04

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Advanced Math	Equivalent expressions	■■□

ID: cc776a04

Which of the following is an equivalent form of $(1.5x-2.4)^2-(5.2x^2-6.4)$?

A. $-2.2x^2+1.6$

B. $-2.2x^2+11.2$

C. $-2.95x^2-7.2x+12.16$

D. $-2.95x^2-7.2x+0.64$

Question ID a520ba07

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Advanced Math	Equivalent expressions	■■□

ID: a520ba07

$\sqrt[3]{x^3y^6}$

Which of the following expressions is equivalent to the expression above?

A. y^2

B. xy^2

C. y^3

D. xy^3

Question ID 5b6af6b1

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Advanced Math	Equivalent expressions	■■□

ID: 5b6af6b1

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 a255ae72

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Advanced Math	Equivalent expressions	■■□

ID: a255ae72

If $x^2 = a + b$ and $y^2 = a + c$, which of the following is equal to $(x^2 - y^2)^2$?

A. $a^2 - 2ac + c^2$

B. $b^2 - 2bc + c^2$

C. $4a^2 - 4abc + c^2$

D. $4a^2 - 2abc + b^2c^2$

Question ID 463eec13

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Advanced Math	Equivalent expressions	■■□

ID: 463eec13

If $x \neq 0$, which of the following expressions is equivalent to $\frac{\sqrt{16x^4y^8}}{x^3}$?

A. $8x^2y^4$

B. $4xy^4$

C. $4x^{-2}y^2$

D. $4x^{-1}y^4$

Question ID a1bf1c4e

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Advanced Math	Equivalent expressions	■■□

ID: a1bf1c4e

$x^2 + 6x + 4$

Which of the following is equivalent to the expression above?

A. $(x + 3)^2 + 5$

B. $(x + 3)^2 - 5$

C. $(x - 3)^2 + 5$

D. $(x - 3)^2 - 5$

Question ID f237ccfc

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Advanced Math	Equivalent expressions	■■□

ID: f237ccfc

The sum of $-2x^2+x+31$ and $3x^2+7x-8$ can be written in the form ax^2+bx+c, where a, b, and c are constants. What is the value of $a+b+c$?

Question ID a391ed22

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Advanced Math	Equivalent expressions	■■□

ID: a391ed22

$$\left(\frac{1}{2}x+\frac{3}{2}\right)\left(\frac{3}{2}x+\frac{1}{2}\right)$$

The expression above is equivalent to ax^2+bx+c, where *a*, *b*, and *c* are constants. What is the value of *b*?

Question ID c3a72da5

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Advanced Math	Equivalent expressions	■■□

ID: c3a72da5

Which of the following is equivalent to the sum of $3x^4+2x^3$ and $4x^4+7x^3$?

A. $16x^{14}$

B. $7x^8+9x^6$

C. $12x^4+14x^3$

D. $7x^4+9x^3$

Question ID 16de54c7

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Advanced Math	Equivalent expressions	■■□

ID: 16de54c7

$2x^2+5x-12$

If the given expression is rewritten in the form $(2x-3)(x+k)$, where k is a constant, what is the value of k ?

Question ID d9137a84

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Advanced Math	Equivalent expressions	■■□

ID: d9137a84

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

A. $x^{-2}z^{10}+y^{11}z^{-2}$

B. $x^{-2}z^{10}+x^{-6}z^{-2}$

C. $x^{-2}y^{3}z^{10}+y^{8}z^{-7}$

D. $x^{-2}y^{3}z^{10}+x^{-6}y^{11}z^{-2}$

Question ID 3e9cc0c2

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Advanced Math	Equivalent expressions	■■□

ID: 3e9cc0c2

Which of the following is equivalent to $(1-p)(1+p+p^2+p^3+p^4+p^5+p^6)$?

A. $1-p^8$

B. $1-p^7$

C. $1-p^6$

D. $1-p^5$

Question ID 7348f046

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Advanced Math	Equivalent expressions	■■□

ID: 7348f046

$(2x+3)-(x-7)$

Which of the following is equivalent to the given expression?

A. $x-4$

B. $3x-4$

C. $x+10$

D. $2x^2+21$

Question ID b47419f4

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Advanced Math	Equivalent expressions	■■□

ID: b47419f4

$$\left(\frac{1}{2}x+3\right)-\left(\frac{2}{3}x-5\right)$$

Which of the following is equivalent to the expression above?

A. $-\frac{1}{6}x+8$

B. $-\frac{1}{6}x-2$

C. $-\frac{1}{3}x^2+\frac{1}{2}x+15$

D. $-\frac{1}{3}x^2-\frac{9}{2}x-15$

Question ID 8838a672

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Advanced Math	Equivalent expressions	■■□

ID: 8838a672

$(4x^3-5x^2+3)-(6x^3+2x^2-x)$

Which of the following expressions is equivalent to the expression above?

A. $-10x^3-3x^2+x+3$

B. $-2x^3-7x^2+x+3$

C. $-2x^3-3x^2+x+3$

D. $10x^3-7x^2-x+3$

Question ID 0b3d25c5

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Advanced Math	Equivalent expressions	■■□

ID: 0b3d25c5

Which of the following is equivalent to $\sqrt[4]{x^2+8x+16}$, where $x>0$?

A. $(x+4)^4$

B. $(x+4)^2$

C. $(x+4)$

D. $(x+4)^{\frac{1}{2}}$

Question ID c602140f

Assessment	Test	Domain	Skill	Difficulty
SAT	Math	Advanced Math	Equivalent expressions	■■□

ID: c602140f

$(x-11y)(2x-3y)-12y(-2x+3y)$

Which of the following is equivalent to the expression above?

A. $x-23y$

B. $2x^2-xy-3y^2$

C. $2x^2+24xy+36y^2$

D. $2x^2-49xy+69y^2$

Question ID 371cbf6b

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

ID: 371cbf6b

$(ax+3)(5x^2-bx+4)=20x^3-9x^2-2x+12$

The equation above is true for all x, where a and b are constants. What is the value of ab ?

A. 18

B. 20

C. 24

D. 40

Question ID 40c09d66

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

ID: 40c09d66

If $\frac{\sqrt{x^5}}{\sqrt[3]{x^4}} = x^{\frac{a}{b}}$ for all positive values of x, what is the value of $\frac{a}{b}$?

Question ID 34847f8a

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

ID: 34847f8a

$$\frac{2}{x-2}+\frac{3}{x+5}=\frac{rx+t}{(x-2)(x+5)}$$

The equation above is true for all $x > 2$, where r and t are positive constants. What is the value of rt ?

A. -20

B. 15

C. 20

D. 60

Question ID 137cc6fd

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

ID: 137cc6fd

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

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

Question ID ea6d05bb

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

ID: ea6d05bb

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 d8789a4c

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

ID: d8789a4c

$$\frac{x^2-c}{x-b}$$

In the expression above, b and c are positive integers. If the expression is equivalent to $x+b$ and $x \neq b$, which of the following could be the value of c?

A. 4

B. 6

C. 8

D. 10

Question ID 5355c0ef

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

ID: 5355c0ef

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

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 c81b6c57

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

ID: c81b6c57

In the expression $3(2x^2+px+8)-16x(p+4)$, p is a constant. This expression is equivalent to the expression $6x^2-155x+24$. What is the value of p ?

A. -3

B. 7

C. 13

D. 155

Question ID 2c88af4d

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

ID: 2c88af4d

The expression $\frac{x^{-2}y^{\frac{1}{2}}}{x^{\frac{1}{3}}y^{-1}}$, where $x > 1$ and $y > 1$, is equivalent to which of the following?

A. $\frac{\sqrt{y}}{\sqrt[3]{x^2}}$

B. $\frac{y\sqrt{y}}{\sqrt[3]{x^2}}$

C. $\frac{y\sqrt{y}}{x\sqrt{x}}$

D. $\frac{y\sqrt{y}}{x^2\sqrt[3]{x}}$

Question ID 22fd3e1f

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

ID: 22fd3e1f

$f(x) = x^3 - 9x$

$g(x) = x^2 - 2x - 3$

Which of the following expressions is equivalent to $\frac{f(x)}{g(x)}$, for $x > 3$?

A. $\frac{1}{x+1}$

B. $\frac{x+3}{x+1}$

C. $\frac{x(x-3)}{x+1}$

D. $\frac{x(x+3)}{x+1}$

Question ID a0b4103e

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

ID: a0b4103e

The expression $\frac{1}{3}x^2-2$ can be rewritten as $\frac{1}{3}(x-k)(x+k)$, where k is a positive constant. What is the value of k ?

A. 2

B. 6

C. $\sqrt{2}$

D. $\sqrt{6}$

Question ID ad038c19

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

ID: ad038c19

Which of the following is equivalent to $\left(a+\frac{b}{2}\right)^2$?

A. $a^2+\frac{b^2}{2}$

B. $a^2+\frac{b^2}{4}$

C. $a^2+\frac{ab}{2}+\frac{b^2}{2}$

D. $a^2+ab+\frac{b^2}{4}$

Question ID 12e7faf8

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

ID: 12e7faf8

The equation $\frac{x^2+6x-7}{x+7} = ax+d$ is true for all $x \neq -7$, where a and d are integers. What is the value of $a+d$?

A. -6

B. -1

C. 0

D. 1

Question ID 89fc23af

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

ID: 89fc23af

Which of the following expressions is equivalent to $\frac{x^2-2x-5}{x-3}$?

A. $x-5-\frac{20}{x-3}$

B. $x-5-\frac{10}{x-3}$

C. $x+1-\frac{8}{x-3}$

D. $x+1-\frac{2}{x-3}$

Question ID 911c415b

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

ID: 911c415b

$(7532+100y^2)+10(10y^2-110)$

The expression above can be written in the form ay^2+b, where a and b are constants. What is the value of $a+b$?

Question ID f89e1d6f

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

ID: f89e1d6f

If $a = c + d$, which of the following is equivalent to the expression $x^2 - c^2 - 2cd - d^2$?

A. $(x + a)^2$

B. $(x - a)^2$

C. $(x + a)(x - a)$

D. $x^2 - ax - a^2$

Question ID e117d3b8

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

ID: e117d3b8

If a and c are positive numbers, which of the following is equivalent to $\sqrt{(a+c)^3} \cdot \sqrt{a+c}$?

A. $a+c$

B. a^2+c^2

C. $a^2+2ac+c^2$

D. a^2c^2