ALGEBRA 2

Simplifying Rational Expressions

1. For all values of x for which the expression is defined,

$\frac{x^3+2x^2-9x-18}{x^3-x^2-6x}$ in simplest form, is equivalent to

(1) 3

(2) $\frac{-17}{2}$

(3) $\frac{x+3}{x}$

(4) $\frac{x^2-9}{x(x-3)}$

2. Which expression is equivalent to, $\frac{4x^3+9x-5}{2x-1}$, where x is ≠ ½ ?

(1) $2x^2+x+5$

(2) $2x^2+\frac{11}{2}+\frac{1}{2(2x-1)}$

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

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

3. The expression $\frac{-3x^2-5x+2}{x^3+2x^2}$ can be rewritten as

(1) $\frac{-3x-3}{x^2+2x^2}$

(2) $\frac{-3x-1}{x^2}$

(3) $-3x^{-1}+1$

(4) $-3x^{-1}+x^{-2}$

4.The expression $\frac{x^3+2x^2+x+6}{x+2}$ is equivalent to

(1) x^2+3

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

(3) $2x^2+x+6$

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

5.The expression $\frac{4x^3+5x+10}{2x+3}$ is equivalent to

(1) $2x^2 + 3x - 7 + \frac{31}{2x+3}$

(2) $2x^2 - 3x + 7 - \frac{11}{2x+3}$

(3) $2x^2 + 2.5x + 5 + \frac{15}{2x+3}$

(4) $2x^2 - 2.5x - 5 - \frac{20}{2x+3}$

6.Written in simplest form, $\frac{c^2 - d^2}{d^2 + cd - 2c^2}$ where $c \neq d$, is equivalent to

(1) $\frac{c+d}{d+2c}$

(2) $\frac{c-d}{d+2c}$

(3) $\frac{-c-d}{d+2c}$

(4) $\frac{-c+d}{d+2c}$

7.The expression $\frac{3}{a-1} + \frac{3}{1-a}$ is equivalent to

(1) 0

(2) $\frac{6}{a^2-1}$

(3) 6

(4) $\frac{6}{1-a^2}$

8.What is $\frac{x}{x-1} - \frac{1}{2-2x}$ expressed as a single fraction?

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

(2) $\frac{2x-1}{2-2x}$

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

(4) $\frac{2x-1}{2(x-1)}$

9.When written in simplest form, what is the expression $\frac{x^2 - y^2}{y^2 + xy - 2x^2}$ equivalent to?

(1) $\frac{y+x}{y+2x}$

(2) $\frac{-y-x}{y+2x}$

(3) $\frac{-x+y}{y+2x}$

(4) $\frac{y+x}{y+2x}$

10. The difference $\frac{2x}{x-1} - \frac{x^2}{x^2-1}$ expressed in simplest form, is equivalent to

(1) $\frac{2-x}{x^2-1}$

(2) $-\frac{x^2+2x}{x^2-1}$

(3) $\frac{x^2+2x}{x^2-1}$

(4) $\frac{x^2-2}{x^2-1}$

Answers

(1) 3 (2) 1 (3) 4 (4) 2 (5) 2

(6) 3 (7) 1 (8) 3 (9) 2 (10) 3