

Multiplying & Dividing Rational Expressions

Name: _____

Date: _____

1. Simplify: $\frac{3x^2 - 6x}{4 - x^2} \cdot \frac{3x^2 + 5x - 2}{27x^2 - 3}$

- A. $\frac{-x}{3x + 1}$ B. $\frac{-x(x - 2)}{(3x - 1)(x + 2)}$
 C. $\frac{x(x - 2)}{(3x - 1)(x + 2)}$ D. $\frac{-x(x + 2)}{(3x - 1)(x + 2)}$

2. Multiply: $\frac{a^2 + 7a + 12}{a^2 - 9} \cdot \frac{a - 3}{a + 3}$

- A. $\frac{a + 4}{a - 3}$ B. $\frac{a - 4}{a + 3}$ C. $\frac{a + 4}{a + 3}$ D. $\frac{a - 4}{a - 3}$

3. Simplify: $\frac{c^2 - c - 12}{c^2 + 4c + 3} \div \frac{c^2 - 6c + 8}{c^2 + 5c + 4}$

- A. $\frac{c + 4}{c - 2}$ B. $\frac{c - 4}{c - 2}$ C. $\frac{c - 4}{c + 2}$ D. $\frac{c + 4}{c + 2}$

4. Simplify: $\frac{4a - 28}{6} \div \frac{a^2 - 49}{3a - 21}$

- A. $\frac{2(a - 7)}{(a + 7)}$ B. $\frac{2a - 14}{7}$
 C. $\frac{a^2 + 4a - 77}{6(3a - 21)}$ D. $\frac{a - 8}{6(a - 7)}$

5. Simplify: $\frac{a^2 - b^2}{8a} \div \frac{(a + b)^2}{4a^3}$

- A. $\frac{a^2(a + b)}{2(a + b)}$ B. $\frac{a^2(a - b)}{2(a + b)}$
 C. $\frac{a^2(a + b)}{2(a - b)}$ D. $\frac{a^2(a - b)}{2(a - b)}$

6. Simplify: $\frac{x^2 + 2x - 24}{x - 3} \div \frac{x + 4}{x - 3}$

- A. $x - 6$ B. $\frac{(x - 4)(x + 6)}{(x + 4)}$
 C. $\frac{(x - 6)(x + 4)^2}{(x - 3)^2}$ D. $6 - x$

7. Simplify: $\frac{12x^2 + 4x}{9 - 4x^2} \cdot \frac{6x^2 + 7x - 3}{18x^2 - 2}$

- A. $\frac{-2x(3x + 1)}{(2x + 3)(3x - 1)}$ B. $\frac{2x}{2x + 3}$
 C. $\frac{2x}{2x - 3}$ D. $\frac{-2x}{2x + 3}$

8. Simplify: $\frac{x^2 + 4x - 21}{x^2 - 6x + 9} \div \frac{x + 7}{x - 3}$

- A. 1 B. $\frac{(x + 7)^2}{(x - 3)^2}$
 C. $\frac{(x - 3)^2}{(x + 7)^2}$ D. $\frac{x + 7}{x - 3}$

9. Simplify: $\frac{x^2 + 3x + xy + 3y}{x^2 + 4x + xy + 4y} \div \frac{x^2 + 4x + 3}{x^2 - 16}$

- A. $\frac{x - 2}{x + 1}$ B. $\frac{x - 4}{x + 1}$ C. $\frac{x + 4}{x + 1}$ D. $\frac{x + 4}{x - 1}$

10. Multiply: $\frac{x^2 + 2x + 1}{x - 5} \times \frac{x^2 - 25}{x^2 + 6x + 5}$

- A. $x - 1$ B. $\frac{x + 1}{x - 5}$ C. $x + 1$ D. $1 - x$

11. Simplify: $\frac{x^2 - 4x + 3}{x^2 - 9} \div \frac{9 - x^2}{x^2 + 6x + 9}$

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

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

12. Simplify: $\frac{x^2 - x - 2}{x^2 + 6x + 5} \div \frac{2x^2 - 3x - 2}{4x^2 - 1}$

A. $\frac{(x+1)(2x-1)}{(x+3)(x+2)}$ B. $\frac{2x-1}{x+5}$

C. $\frac{x+5}{2x-1}$ D. $\frac{1}{(x+2)(x+3)}$

13. Multiply: $\frac{x^2 + 3x - 10}{x^2 - 4} \cdot \frac{x+2}{x^2 - 9}$

A. $\frac{5}{x-9}$ B. $\frac{x+5}{x-9}$

C. $\frac{x+5}{x^2-9}$ D. $\frac{x-5}{x^2+9}$

14. Simplify: $\frac{c^2 - 3c - 10}{c^2 - 4} \div \frac{c^2 - 25}{c^2 + 2c - 15}$

A. $\frac{c+2}{2(c-3)}$ B. $\frac{c-3}{c^2}$

C. $\frac{c-3}{c-2}$ D. $\frac{c^2(c-3)}{c-2}$

15. Simplify: $\frac{3x-15}{4} \div \frac{x^2-25}{2x-10}$

A. $\frac{3(x-5)}{2(x+5)}$ B. $\frac{3x-5}{4}$

C. $\frac{3(x-5)}{(x+5)}$ D. $\frac{(x-5)}{2(x+5)}$

16. Simplify: $\frac{\left(\frac{7x^2y}{21x^2-6x}\right)}{\left(\frac{14x}{49x^2-4}\right)}$

A. $\frac{7xy+2xy}{6}$ B. $\frac{7xy+2xy}{6y}$

C. $\frac{6}{7xy+2x}$ D. $\frac{7xy+2y}{6}$

17. Simplify: $\frac{\frac{3x+6}{x+5}}{\frac{x+2}{x^2-25}}$

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

C. $\frac{3(x+2)^2}{(x+5)^2(x-5)}$ D. $x+5$

18. Simplify: $\frac{\left(\frac{13xy}{16x^2-10x}\right)}{\left(\frac{26x}{64x^2-25}\right)}$

A. $\frac{4x}{8xy+5y}$ B. $\frac{8xy+5y}{4x}$

C. $\frac{4y}{8xy+5x}$ D. $\frac{2y}{8x+5}$

19. Simplify: $\frac{2x^2-x-6}{2x^2+3x-2} \div \frac{x^2-9}{x^2-x-6} \times \frac{4x^2-4x+1}{2x^2-5x+2}$

A. 1 B. 2

C. $\frac{2x+3}{x+3}$ D. $\frac{x+3}{2x+3}$

20. Simplify: $\frac{2x^2-2}{2x^2-3x+1} \div \frac{x^2+7x+12}{x^2+x-6} \times \frac{4x^2-1}{2x^2-3x-2}$

A. $\frac{1}{x+4}$ B. $\frac{2x+2}{x+3}$

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

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1.
Answer: A
Objective: A.APR.7
2.
Answer: A
Objective: A.APR.7
3.
Answer: A
Objective: A.APR.7
4.
Answer: A
Objective: A.APR.7
5.
Answer: B
Objective: A.APR.7
6.
Answer: B
Objective: A.APR.7
7.
Answer: A
Objective: A.APR.7
8.
Answer: A
Objective: A.APR.7
9.
Answer: B
Objective: A.APR.7
10.
Answer: C
Objective: A.APR.7
11.
Answer: A
Objective: A.APR.7
12.
Answer: B
Objective: A.APR.7
13.
Answer: C
Objective: A.APR.7
14.
Answer: C
Objective: A.APR.7

15.
Answer: A
Objective: A.APR.7
16.
Answer: D
Objective: A.APR.7
17.
Answer: A
Objective: A.APR.7
18.
Answer: B
Objective: A.APR.7
19.
Answer: C
Objective: A.APR.7
20.
Answer: D
Objective: A.APR.7