

Rational Expressions: Reduce and Add

Date _____ Period _____

Simplify each and state the excluded values.

1) $\frac{15k + 10}{15k^2}$

2) $\frac{a^2 - 5a + 4}{a - 1}$

3) $\frac{3x - 15}{x^2 - x - 20}$

4) $\frac{x^2 + 8x + 16}{7x + 28}$

Simplify each expression.

5) $\frac{x + 5y}{25x^2} - \frac{3x}{25x^2}$

6) $\frac{4x - 6y}{30xy} + \frac{5}{30xy}$

7) $\frac{7}{v^2 - 3v - 28} - 8v$

8) $\frac{6b}{3b} + \frac{5b}{4b + 16}$

A) $\frac{-8v^3 + 24v^2 + 226v + 7}{(v - 7)(v + 4)}$

A) $\frac{13b + 32}{4(b + 4)}$

B) $\frac{9b^2 + 25b + 4}{3b(b + 4)}$

B) $\frac{-8v^3 + 24v^2 + 225v + 7}{(v - 7)(v + 4)}$

C) $\frac{3b + 8}{b + 4}$

D) $\frac{10b + 1}{7b + 16}$

C) $\frac{-8v^3 + 24v^2 + 224v + 7}{(v - 7)(v + 4)}$

D) $\frac{56v + 8v^2}{(v - 7)(v + 4)}$

$$9) \frac{7}{3a^2 + 6a} - \frac{8a}{3}$$

A) $\frac{-8a^3 - 16a^2 + 8}{3a(a + 2)}$

B) $\frac{7 - 8a^3 - 16a^2}{3a(a + 2)}$

C) $\frac{56}{9(a + 2)}$

D) $\frac{18 - 3a}{8a(a + 2)}$

$$10) \frac{4n}{20n + 8} - \frac{3}{3n}$$

A) $\frac{4n^2 - 19n - 8}{4n(5n + 2)}$

B) $\frac{n^2 - 5n - 2}{n(5n + 2)}$

C) $\frac{35n^2 - 49n - 24}{12n(5n + 2)}$

D) $\frac{5n^2 - 19n - 8}{4n(5n + 2)}$

$$11) \frac{4}{3x - 4} - \frac{2}{x - 4}$$

A) $\frac{-5x - 12 + x^2}{(x - 4)(3x - 4)}$

B) $\frac{-2x - 8}{(x - 4)(3x - 4)}$

C) $\frac{x - 8}{(x - 4)(x - 3)}$

D) $\frac{-x - 12}{(x - 4)(3x - 4)}$

$$12) \frac{3p}{4p} + \frac{p - 5}{5p^2 - 11p + 2}$$

A) $\frac{56p + p^2 + 6}{7p(p + 6)}$

B) $\frac{15p^2 - 29p - 14}{4(p - 2)(5p - 1)}$

C) $\frac{8p^2 + 56p + 6}{7p(p + 6)}$

D) $\frac{8 + p}{2(4p + 3)}$

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$$\frac{3k + 2}{3k^2}; \{0\}$$

2) $\frac{a^2 - 5a + 4}{a - 1}$

$$a - 4; \{1\}$$

3) $\frac{3x - 15}{x^2 - x - 20}$

$$\frac{3}{x + 4}; \{5, -4\}$$

4) $\frac{x^2 + 8x + 16}{7x + 28}$

$$\frac{x + 4}{7}; \{-4\}$$

Simplify each expression.

5) $\frac{x + 5y}{25x^2} - \frac{3x}{25x^2}$

$$\frac{-2x + 5y}{25x^2}$$

6) $\frac{4x - 6y}{30xy} + \frac{5}{30xy}$

$$\frac{4x - 6y + 5}{30xy}$$

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