

A.APR.D.7: Addition and Subtraction of Rationals 4

- 1 Which expression is equivalent to $\frac{x^3}{x+3} - \frac{9x}{x+3}$?
- 1) $\frac{-9x}{x+3}$ 2) $\frac{x}{x+3}$ 3) $\frac{x^2}{x+3}$ 4) $x(x-3)$
- 2 For all values of b for which the expressions are defined, $\frac{b^2}{b-3} + \frac{9}{3-b}$ is equivalent to
- 1) -1 2) $\frac{1}{3-b}$ 3) $b-3$ 4) $b+3$
- 3 Expressed in simplest form, $\frac{5x+3}{x} - \frac{x-1}{2x}$ is
- 1) $\frac{4x+4}{3x}$ 2) $\frac{2x+2}{x}$ 3) $\frac{9x+7}{2x}$ 4) $\frac{9x-5}{2x}$
- 4 Expressed as a single fraction, $\frac{3}{x-1} - \frac{2}{x}$ is equivalent to
- 1) $\frac{1}{x(x-1)}$ 2) $\frac{x-2}{x(x-1)}$ 3) $\frac{x+2}{x(x-1)}$
4) $\frac{3x-2}{x(x-1)}$
- 5 Expressed as a single fraction, $\frac{5}{x-3} - \frac{1}{x}$ is equivalent to
- 1) $\frac{6x-3}{x^2-3x}$ 2) $\frac{4x+3}{x^2-3x}$ 3) $\frac{4x+3}{2x-3}$ 4) $\frac{4}{x^2-3x}$
- 6 The expression $\frac{x}{x-1} + \frac{x}{x+1}$ is equivalent to
- 1) 1 2) $\frac{2x}{x^2-1}$ 3) -2 4) $\frac{2x^2}{x^2-1}$
- 7 The reciprocal of the expression $\frac{2}{x} + \frac{3}{1}$ is
- 1) $\frac{2+3x}{x}$ 2) $\frac{x}{2+3x}$ 3) $2x+3$ 4) $2+3x$
- 8 If the probability that an event will occur is $\frac{x}{y}$, then the probability that the event will *not* occur is
- 1) $\frac{-x}{y}$ 2) $\frac{-y}{x}$ 3) $\frac{1-x}{y}$ 4) $\frac{y-x}{y}$
- 9 If the probability that an event will *not* occur is $\frac{1}{x^2}$, then the probability that the event will occur is represented by
- 1) -1 2) 0 3) x^2 4) $\frac{x^2-1}{x^2}$
- 10 If the probability that an event will occur is $\frac{1}{x+1}$, then the probability that the event will *not* occur is
- 1) $x+1$ 2) $\frac{-1}{x+1}$ 3) $\frac{x}{x+1}$ 4) $\frac{-x}{x+1}$
- 11 Express $\frac{1}{2x} - \frac{3}{14x}$ as a single fraction in lowest terms.
- 12 Express in simplest form: $\frac{3a+1}{a^2-1} - \frac{1}{a+1}$
- 13 Express in simplest form: $\frac{3y+15}{25-y^2} + \frac{2}{y-5}$
- 14 Simplify: $\frac{a-1}{1-a} + \frac{1-b}{b-1}$
- 15 Simplify: $\frac{m}{mn-n^2} - \frac{1}{m-n} - \frac{1}{n}$
- 16 Simplify: $\frac{a+2}{a^2-5a+6} + \frac{a+2}{a^2-7a+12} + \frac{1}{a^2-6a+8}$

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Answer Section**

- 1 ANS: 4 REF: 010218siii
2 ANS: 4 REF: 088931siii
3 ANS: 3 REF: 010118siii
4 ANS: 3 REF: 018734siii
5 ANS: 2 REF: 089919siii
6 ANS: 4 REF: 068421b
7 ANS: 2 REF: 060327siii
8 ANS: 4 REF: 088619siii
9 ANS: 4 REF: 088523siii
10 ANS: 3 REF: 068522siii

11 ANS:

$$\frac{2}{7x}$$

REF: 068708siii

12 ANS:

$$\frac{2}{a-1}$$

REF: 018439siii

13 ANS:

$$\frac{1}{5-y}$$

REF: 069740siii

14 ANS:

$$-2$$

REF: 119403al

15 ANS:

$$0$$

REF: 019103al

16 ANS:

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

REF: 090501al