

**A.A.17: Addition and Subtraction of Rationals 1: Add or subtract fractional expressions with monomial or like binomial denominators**

- 1 What is the sum of  $\frac{d}{2}$  and  $\frac{2d}{3}$  expressed in simplest form?
  - 1)  $\frac{3d}{5}$
  - 2)  $\frac{3d}{6}$
  - 3)  $\frac{7d}{5}$
  - 4)  $\frac{7d}{6}$
- 2 The expression  $\frac{2n}{5} + \frac{3n}{2}$  is equivalent to
  - 1)  $\frac{5n}{7}$
  - 2)  $\frac{6n^2}{10}$
  - 3)  $\frac{19n}{10}$
  - 4)  $\frac{7n}{10}$
- 3 What is the sum of  $\frac{3}{2x}$  and  $\frac{4}{3x}$  expressed in simplest form?
  - 1)  $\frac{12}{6x^2}$
  - 2)  $\frac{17}{6x}$
  - 3)  $\frac{7}{5x}$
  - 4)  $\frac{17}{12x}$
- 4 What is the sum of  $\frac{3}{2x}$  and  $\frac{7}{4x}$ ?
  - 1)  $\frac{21}{8x^2}$
  - 2)  $\frac{13}{4x}$
  - 3)  $\frac{10}{6x}$
  - 4)  $\frac{13}{8x}$
- 5 The expression  $\frac{a}{b} - \frac{1}{3}$  is equivalent to
  - 1)  $\frac{a-1}{b-3}$
  - 2)  $\frac{a-1}{3b}$
  - 3)  $\frac{3a-b}{3b}$
  - 4)  $\frac{3a-b}{b-3}$
- 6 What is  $\frac{6}{5x} - \frac{2}{3x}$  in simplest form?
  - 1)  $\frac{8}{15x^2}$
  - 2)  $\frac{8}{15x}$
  - 3)  $\frac{4}{15x}$
  - 4)  $\frac{4}{2x}$
- 7 What is  $\frac{6}{4a} - \frac{2}{3a}$  expressed in simplest form?
  - 1)  $\frac{4}{a}$
  - 2)  $\frac{5}{6a}$
  - 3)  $\frac{8}{7a}$
  - 4)  $\frac{10}{12a}$
- 8 Which fraction is equivalent to  $\frac{4}{3a} - \frac{5}{2a}$ ?
  - 1)  $-\frac{1}{a}$
  - 2)  $-\frac{1}{5a}$
  - 3)  $-\frac{7}{6a}$
  - 4)  $-\frac{7}{6a^2}$

- 9 What is  $\frac{10}{7x} - \frac{3}{5x}$  expressed in simplest form?
- $\frac{7}{2x}$
  - $\frac{29}{2x}$
  - $\frac{29}{35x}$
  - $\frac{55}{35x}$
- 10 What is  $\frac{2+x}{5x} - \frac{x-2}{5x}$  expressed in simplest form?
- 0
  - $\frac{2}{5}$
  - $\frac{4}{5x}$
  - $\frac{2x+4}{5x}$
- 11 What is  $\frac{7}{12x} - \frac{y}{6x^2}$  expressed in simplest form?
- $\frac{7-y}{6x}$
  - $\frac{7-y}{12x-6x^2}$
  - $-\frac{7y}{12x^2}$
  - $\frac{7x-2y}{12x^2}$
- 12 What is the sum of  $\frac{3x^2}{x-2}$  and  $\frac{x^2}{x-2}$ ?
- $\frac{3x^4}{(x-2)^2}$
  - $\frac{3x^4}{x-2}$
  - $\frac{4x^2}{(x-2)^2}$
  - $\frac{4x^2}{x-2}$
- 13 What is the sum of  $\frac{-x+7}{2x+4}$  and  $\frac{2x+5}{2x+4}$ ?
- $\frac{x+12}{2x+4}$
  - $\frac{3x+12}{2x+4}$
  - $\frac{x+12}{4x+8}$
  - $\frac{3x+12}{4x+8}$
- 14 The expression  $\frac{2x+13}{2x+6} - \frac{3x-6}{2x+6}$  is equivalent to
- $\frac{-x+19}{2(x+3)}$
  - $\frac{-x+7}{2(x+3)}$
  - $\frac{5x+19}{2(x+3)}$
  - $\frac{5x+7}{4x+12}$
- 15 The sum of  $\frac{3x-4}{x+3}$  and  $\frac{2x-5}{x+3}$  is
- $\frac{5x-9}{x+3}$
  - $\frac{5x+1}{2x+6}$
  - $\frac{5x-9}{x+6}$
  - $\frac{5x+1}{x+3}$
- 16 What is the sum of  $\frac{2y}{y+5}$  and  $\frac{10}{y+5}$  expressed in simplest form?
- 1
  - 2
  - $\frac{12y}{y+5}$
  - $\frac{2y+10}{y+5}$

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## **Answer Section**

1 ANS: 4

$$\frac{(d \times 3) + (2 \times 2d)}{2 \times 3} = \frac{3d + 4d}{6} = \frac{7d}{6}$$

REF: fall0727ia

2 ANS: 3

$$\frac{2n}{5} + \frac{3n}{2} = \frac{4n + 15n}{10} = \frac{19n}{10}$$

REF: 011420ia

3 ANS: 2

$$\frac{2}{3x} + \frac{4}{3x} = \frac{9x + 8x}{6x^2} = \frac{17x}{6x^2} = \frac{17}{6x}$$

REF: 080917ia

4 ANS: 2

$$\frac{3}{2x} + \frac{7}{4x} = \frac{12x + 14x}{8x^2} = \frac{26x}{8x^2} = \frac{13}{4x}$$

REF: 011120ia

5 ANS: 3

REF: 061424ia

6 ANS: 2

$$\frac{6}{5x} - \frac{2}{3x} = \frac{18x - 10x}{15x^2} = \frac{8x}{15x^2} = \frac{8}{15x}$$

REF: 010921ia

7 ANS: 2

$$\frac{6}{4a} - \frac{2}{3a} = \frac{18a - 8a}{12a^2} = \frac{10a}{12a^2} = \frac{5}{6a}$$

REF: 060929ia

8 ANS: 3

$$\frac{4}{3a} - \frac{5}{2a} = \frac{8}{6a} - \frac{15}{6a} = -\frac{7}{6a}$$

REF: 081328ia

9 ANS: 3

$$\frac{10}{7x} - \frac{3}{5x} = \frac{50x - 21x}{35x^2} = \frac{29x}{35x^2} = \frac{29}{35x}$$

REF: 011511ia

10 ANS: 3

$$\frac{2+x}{5x} - \frac{x-2}{5x} = \frac{2+x-x+2}{5x} = \frac{4}{5x}$$

REF: 081027ia

11 ANS: 4

$$\frac{7}{12x} - \frac{y}{6x^2} = \frac{42x^2 - 12xy}{72x^3} = \frac{6x(7x - 2y)}{72x^3} = \frac{7x - 2y}{12x^2}$$

REF: 061129ia

12 ANS: 4

REF: 011025ia

13 ANS: 1

REF: 061024ia

14 ANS: 1

REF: 061220ia

15 ANS: 1

REF: 081409ia

16 ANS: 2

$$\frac{2y}{y+5} + \frac{10}{y+5} = \frac{2y+10}{y+5} = \frac{2(y+5)}{y+5} = 2$$

REF: 011230ia