

A2.A.16: Addition and Subtraction of Rationals 2: Perform arithmetic operations with rational expressions and rename to lowest terms

- 1 What is the sum of $(y - 5) + \frac{3}{y+2}$?
- 2 Expressed as a single fraction, what is $\frac{1}{x+1} + \frac{1}{x}$, $x \neq 0, -1$?
- 3 The expression $\frac{x}{x-1} + \frac{x}{x+1}$ is equivalent to
- 4 The expression $\frac{6}{y-5} - \frac{y+5}{y^2-25}$ is equivalent to
- 5 Expressed as a single fraction, $\frac{3}{x-1} - \frac{2}{x}$ is equivalent to
- 6 Expressed as a single fraction, $\frac{5}{x-3} - \frac{1}{x}$ is equivalent to
- 7 What is the sum of $\frac{3}{x-3}$ and $\frac{x}{3-x}$?
- 8 Expressed in simplest form, $\frac{3y}{2y-6} + \frac{9}{6-2y}$ is equivalent to
- 9 For all values of b for which the expressions are defined, $\frac{b^2}{b-3} + \frac{9}{3-b}$ is equivalent to
- 10 What is $\frac{x}{x-1} - \frac{1}{2-2x}$ expressed as a single fraction?
- 11 The expression $\frac{2}{\sin x} - \frac{5}{\sin x - 1}$ is equivalent to
- 12 If the probability that an event will occur is $\frac{1}{x+1}$, then the probability that the event will *not* occur is
- 13 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
- 14 If the probability that an event will occur is $\frac{x}{y}$, then the probability that the event will *not* occur is

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Answer Section

1 ANS:

$$\frac{y^2 - 3y - 7}{y + 2}$$

REF: 080505b

2 ANS:

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

REF: 069906a

3 ANS:

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

REF: 068421b

4 ANS:

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

REF: 080805b

5 ANS:

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

REF: 018734siii

6 ANS:

$$\frac{4x + 3}{x^2 - 3x}$$

REF: 089919siii

7 ANS:

$$-1$$

REF: 010315b

8 ANS:

$$\frac{3}{2}$$

$$\frac{3y}{2y-6} + \frac{9}{6-2y} = \frac{3y}{2y-6} - \frac{9}{2y-6} = \frac{3y-9}{2y-6} = \frac{3(y-3)}{2(y-3)} = \frac{3}{2}$$

REF: 011325a2

9 ANS:

$$b+3$$

REF: 088931siii

10 ANS:

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

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

REF: 011608a2

11 ANS:

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

REF: 060816b

12 ANS:

$$\frac{x}{x+1}$$

REF: 068522siii

13 ANS:

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

REF: 088523siii

14 ANS:

$$\frac{y-x}{y}$$

REF: 088619siii