

8-5

Standardized Test Prep

Adding and Subtracting Rational Expressions

Multiple Choice

For Exercises 1–4, choose the correct letter.

1. Which is the least common denominator of fractions that have denominators $5x + 10$ and $25x^2 - 100$?

(A) $5(x - 2)$ (B) $5(x^2 - 20)$ (C) $25(x^2 - 4)$ (D) $75(x + 2)(x^2 - 4)$

2. Which expression equals $\frac{\frac{2}{m} + 6}{\frac{1}{n}}$?

(F) $\frac{12n}{m}$ (G) $\frac{2n + 6mn}{m}$ (H) $\frac{6m + 2}{mn}$ (I) $\frac{m}{2n + 6mn}$

3. Which expression equals $\frac{4}{x^2 - 3x} + \frac{6}{3x - 9}$?

(A) $\frac{2(x + 2)}{x(x - 3)}$ (B) $\frac{10}{x^2 - 9}$ (C) $\frac{4x + 18}{3x(x - 3)}$ (D) $\frac{2}{x}$

4. The harmonic mean of two numbers a and b equals $\frac{2}{\frac{1}{a} + \frac{1}{b}}$. Which expression equals the harmonic mean of x and $x + 1$?

(F) $\frac{2}{x^2 + x}$ (G) $\frac{4x + 2}{x^2 + x}$ (H) $2x + 1$ (I) $\frac{2x^2 + 2x}{2x + 1}$

Short Response

5. Subtract $3 - \frac{1}{x^2 + 5}$. Write your answer in simplest form. State any restrictions on the variable. Show your work.