U4L1 & U4L2 WKST

Practice

For each pair of fractions, write the lowest common denominator.

1. $\frac{1}{4}, \frac{3}{8}$
2. $\frac{5}{12}, \frac{7}{24}$
3. $\frac{1}{3}, \frac{1}{6}$
4. $\frac{5}{3x}, \frac{1}{7x}$
5. $\frac{6}{5a}, \frac{2}{3a}$
6. $\frac{7}{8x}, \frac{5}{6x}$

Simplify. State the restrictions on the variables.

7. $\frac{12x}{4xy}$
8. $\frac{20}{10y}$
9. $\frac{9x^2}{3x}$
10. $\frac{6abc}{3ab}$
11. $\frac{-10x^3y^4}{5x^2y^2}$
12. $\frac{20a^2b^2}{-5ab}$

Simplify.

13. $\frac{x}{2} \times \frac{3}{x}$
14. $\frac{2}{m} \times \frac{m}{4}$
15. $\frac{x}{y} \times \frac{y}{x}$
16. $\frac{m}{3} \div \frac{m}{4}$
17. $\frac{2}{y} \div \frac{4}{y}$
18. $\frac{x}{y} \div \frac{x}{y}$

Multiply.

19. $\frac{x^2y}{x} \times \frac{xy}{y}$
20. $\frac{2xy^2}{2x} \times \frac{5x^2y}{3x}$
21. $\frac{3p^2q^2}{2p^2} \times \frac{4pq}{3qr}$
22. $\frac{7a^2b}{2a} \times \frac{2ab}{2}$

Divide these monomials.

23. $\frac{x^2y^3}{3} \div \frac{xy}{3}$
24. $\frac{2x^2y}{5} \div \frac{2xy}{5}$
25. $\frac{xy^2}{10} \div \frac{2xy^5}{5x^3y^3}$
26. $\frac{3x^3y^2}{2x^2y^2} \div \frac{3}{xy}$

Simplify these fractions.

27. $\frac{7}{y} + \frac{12}{y}$
28. $\frac{x}{a} - \frac{11}{a}$
29. $\frac{7}{12x} - \frac{4}{12x}$
30. $\frac{45xy}{4z} - \frac{9xy}{4z}$

Simplify.

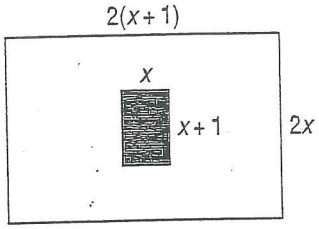
31. $\frac{2}{x} + \frac{3-x}{x}$
32. $\frac{x+3}{3x^2} + \frac{4-x}{3x^2}$
33. $\frac{3}{x^2} - \frac{(7-x)}{x^2}$
34. $\frac{2-x}{5x^2} - \frac{1}{5x^2}$

Simplify.

35. $\frac{x-2}{2} + \frac{x+5}{4}$
36. $\frac{x-2}{3} - \frac{x-6}{4}$
37. $\frac{x+2}{2} - \frac{4-x}{3}$
38. $\frac{2-x}{5} - \frac{3-x}{3}$
39. $\frac{x-1}{4} - \frac{2(x-3)}{6}$
40. $\frac{2(x-2)}{5} + \frac{x+1}{2}$

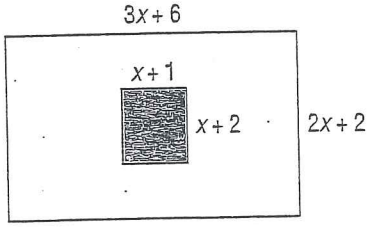
Problems and Applications

41.



a) What is the total area of the figure? Leave your answer in factored form.
b) What is the area of the red rectangle in factored form?
c) What is the quotient of the area of the red rectangle divided by the total area of the figure? Write your answer in simplest form.
d) Check your answer by substituting 1 for x.

42.



a) What is the total area of the figure in factored form?
b) What is the area of the green rectangle in factored form?
c) What is the quotient of the area of the green rectangle divided by the total area of the figure? Write your answer in simplest form.
d) Verify your answer by substituting 2 for x.

Rational Expressions (Homework)

Simplify each of these:

(1) $\frac{x}{2} \times \frac{x}{3}$

(2) $\frac{4x}{3y} \times \frac{2y}{x}$

(3) $\frac{x}{2} \times \frac{x-2}{5}$

(4) $\frac{2x}{7} \div \frac{4y}{14}$

(5) $\frac{4y^2}{9x} \div \frac{2y}{3x^2}$

(6) $\frac{x}{2} \div \frac{x-2}{5}$

(7) $\frac{3x}{4} + \frac{x}{5}$

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

(9) $\frac{2x-1}{2} + \frac{3x-1}{4}$

(10) $\frac{3x}{4} - \frac{2x}{5}$

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

(12) $\frac{x}{5} - \frac{2x+1}{3}$