Worksheet Section 8.4 v01
F2009 Math 085
Dressler

Name_____

Find the least common denominator (LCD).

1) $\frac{2}{t}, \frac{8}{t+6}$

2) $\frac{8}{t}, \frac{9}{t+9}$

3) $\frac{6}{t}, \frac{9}{t+5}$

4) $\frac{4}{t}, \frac{3}{t-7}$

5) $\frac{8}{6a-12}, \frac{4}{a^2-2a}$

6) $\frac{7}{t}, \frac{3}{t-8}$

7) $\frac{4}{t}, \frac{2}{t-6}$

8) $\frac{6}{4a+12}, \frac{3}{a^2+3a}$

9) $\frac{2}{9xy}, \frac{3}{12x^2}$

Perform the indicated operation. Simplify if possible.

10) $\frac{27}{3x} + \frac{10}{2x}$

11) $\frac{1}{9x} + \frac{3}{8x}$

12) $-\frac{5}{9} - \frac{8}{3x}$

13) $\frac{14y}{m} + \frac{5m}{3}$

14) $\frac{4}{x^2} - \frac{7}{x}$

15) $-\frac{3}{14} - \frac{4}{6x}$

16) $\frac{4}{x+3} - \frac{1}{5x+15}$

17) $\frac{14}{3x-6} + \frac{x}{x^2-4}$

18) $\frac{3}{x} + \frac{6}{x-9}$

19) $\frac{4}{x+6} - \frac{2}{x-6}$

20) $\frac{7}{x^2} - \frac{x}{3x+1}$

21) $\frac{x}{2x-7} - \frac{7}{8x-28}$

22) $\frac{7}{x} + 5$

23) $\frac{2}{x^3} - 5x$

24) $\frac{6}{x+8} + 8$

25) $\frac{3}{x+10} + 8$

26) $\frac{7x-8}{x+5} + 1$

27) $\frac{2-x}{x-4} - \frac{2x-5}{4-x}$

28) $\frac{4x-3}{x} + \frac{2x+2}{3x}$

29) $\frac{8y}{x^2-y^2} + \frac{8x}{y^2-x^2}$

30) $\frac{x^2-11}{x^2-2x-15} + \frac{7+3x}{15+2x-x^2}$

31) $\frac{x+3}{x^2-11x+30} + \frac{3x+8}{x^2-7x+10}$

32) $\frac{3}{y^2-3y+2} + \frac{5}{y^2-1}$

33) $\frac{x}{x^2-16} - \frac{6}{x^2+5x+4}$

34) $\frac{x}{x^2-16} - \frac{5}{x^2+5x+4}$

35) $\frac{m-3}{m^2-11m+30} + \frac{5m-4}{m^2-9m+20}$

36) $\frac{m-3}{m^2-3m-4} + \frac{2m-5}{m^2+6m+5}$

37) $\frac{x-5}{x^2-5x+6} + \frac{5x+6}{x^2-3x+2}$

38) $\frac{4}{x^2-3x+2} + \frac{6}{x^2-1}$

Find the least common denominator (LCD).

39) $\frac{1}{r^2 + 12r + 36}, \frac{1}{r^2 + 6r}$

40) $\frac{5}{m^2 - 3m}, \frac{3}{m^2 + 2m - 15}$

41) $\frac{6}{x^2 - 9x + 18}, \frac{3}{x^2 + 3x - 18}$

42) $\frac{7}{x^2 - 6x + 9}, \frac{9}{2x - 6}$

43) $\frac{12x + 8}{11x - 15}, \frac{19x}{11x + 15}$

44) $\frac{10}{23(x - 5)}, \frac{6}{x}$

45) $\frac{5}{23(x + 3)}, \frac{7}{x}$

46) $\frac{4}{x^2 - 81}, \frac{10}{x(x - 9)}$

47) $\frac{2}{3a - 18}, \frac{6}{a^2 - 6a}$

48) $\frac{4}{7a - 21}, \frac{2}{a^2 - 3a}$

49) $\frac{5}{12xy}, \frac{7}{16x^2}$

Perform the indicated operations. Simplify if possible.

50) $\frac{x}{x^2 - 25} + \frac{5}{x + 5} - \frac{6}{x}$

51) $\frac{2ab}{a^2 - b^2} - \frac{b}{a - b} + \frac{8}{2}$

52) $\frac{20}{x^2 + 5x} + \frac{6}{x} + \frac{4}{x + 5}$

53) $\frac{3x}{x + 1} + \frac{4}{x - 1} - \frac{6}{x^2 - 1}$

54) $\frac{5}{4x - 8} - \frac{2}{5x + 5} + \frac{5}{3x + 6}$

55) $\frac{3x}{x^2 - 5x - 36} - \frac{x - 1}{x^2 - 16} + \frac{1}{x^2 - 13x + 36}$

56) $\frac{1}{2r^2 - 3rs - 2s^2} - \frac{7}{5r^2 - 11rs + 2s^2} + \frac{6}{10r^2 + 3rs - s^2}$

57) $\frac{4}{2m^2 - 9mp - 5p^2} + \frac{1}{12m^2 + 4mp - p^2} - \frac{2}{6m^2 - 31mp + 5p^2}$

Two formulas that approximate the dosage of a drug prescribed for children are:

Young's Rule : $C = \frac{DA}{A + 12}$ and Cowling's Rule: $C = \frac{D(A + 1)}{24}$.

In each formula, A = the child's age in years, D = an adult dosage, and C = the proper child's dosage. The formulas apply for ages 2 through 13.

58) Use Young's Rule to find the difference in a child's dosage for an 8–year–old child and a 4–year–old child. Express the answer as a single rational (or fractional) expression in terms of D.

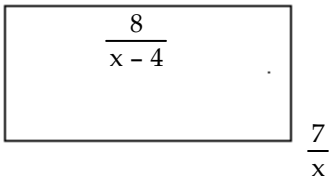
59) Use Young's Rule to find the difference in a child's dosage for a 12–year–old child and an 8–year–old child. Express the answer as a single rational (or fractional) expression in terms of D.

60) Use Cowling's Rule to find the difference in a child's dosage for a 11–year–old child and a 7–year old child. Express the answer as a single rational (or fractional) expression in terms of D.

61) For a 5–year old child, what is the difference in the dosage given by Young's Rule and Cowling's Rule? Express the answer as a single rational (or fractional) expression in terms of D.

Solve the problem.

62) The length of the rectangle is $\frac{8}{x - 4}$ feet, while its width is $\frac{7}{x}$ feet. Find its perimeter.

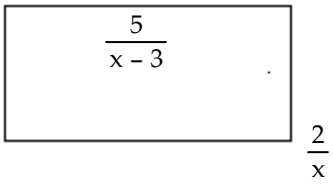


63) A board of length $\frac{2}{x + 6}$ inches was cut into two pieces. If one piece is $\frac{4}{x - 6}$ inches, express the length of the other board as a rational expression.

64) Use Cowling's Rule to find the difference in a child's dosage for a 7–year–old child and a 3–year old child. Express the answer as a single rational (or fractional) expression in terms of D.

Solve the problem.

65) The length of the rectangle is $\frac{5}{x - 3}$ feet, while its width is $\frac{2}{x}$ feet. Find its perimeter.



Two formulas that approximate the dosage of a drug prescribed for children are:

Young's Rule : $C = \frac{DA}{A + 12}$ and Cowling's Rule: $C = \frac{D(A + 1)}{24}$.

In each formula, A = the child's age in years, D = an adult dosage, and C = the proper child's dosage. The formulas apply for ages 2 through 13.

66) Use Young's Rule to find the difference in a child's dosage for a 9–year–old child and a 2–year–old child. Express the answer as a single rational (or fractional) expression in terms of D.

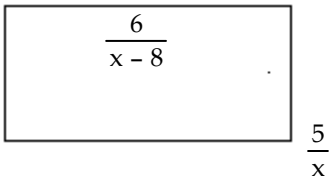
67) Use Young's Rule to find the difference in a child's dosage for a 13–year–old child and an 8–year–old child. Express the answer as a single rational (or fractional) expression in terms of D.

68) Use Cowling's Rule to find the difference in a child's dosage for a 10–year–old child and a 5–year old child. Express the answer as a single rational (or fractional) expression in terms of D.

69) For a 4–year old child, what is the difference in the dosage given by Young's Rule and Cowling's Rule? Express the answer as a single rational (or fractional) expression in terms of D.

Solve the problem.

70) The length of the rectangle is $\frac{6}{x - 8}$ feet, while its width is $\frac{5}{x}$ feet. Find its perimeter.

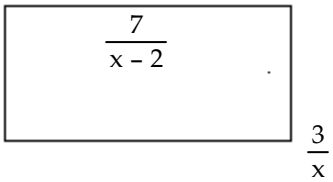


71) A board of length $\frac{4}{x + 6}$ inches was cut into two pieces. If one piece is $\frac{2}{x - 6}$ inches, express the length of the other board as a rational expression.

72) Use Cowling's Rule to find the difference in a child's dosage for a 9–year–old child and a 4–year old child. Express the answer as a single rational (or fractional) expression in terms of D.

Solve the problem.

73) The length of the rectangle is $\frac{7}{x - 2}$ feet, while its width is $\frac{3}{x}$ feet. Find its perimeter.



1) $t(t + 6)$
2) $t(t + 9)$
3) $t(t + 5)$
4) $t(t - 7)$
5) $6a(a - 2)$
6) $t(t - 8)$
7) $t(t - 6)$
8) $4a(a + 3)$
9) $36x^2y$
10) $\frac{14}{x}$
11) $\frac{35}{72x}$
12) $\frac{-5x - 24}{9x}$
13) $\frac{42y + 5m^2}{3m}$
14) $\frac{4 - 7x}{x^2}$
15) $\frac{-9x - 28}{42x}$
16) $\frac{19}{5(x + 3)}$
17) $\frac{17x + 28}{3(x + 2)(x - 2)}$
18) $\frac{9x - 27}{x(x - 9)}$
19) $\frac{2x - 36}{(x + 6)(x - 6)}$
20) $\frac{7 + 21x - x^3}{x^2(3x + 1)}$
21) $\frac{4x - 7}{4(2x - 7)}$
22) $\frac{7 + 5x}{x}$
23) $\frac{2 - 5x^4}{x^3}$
24) $\frac{8x + 70}{x + 8}$
25) $\frac{8x + 83}{x + 10}$
26) $\frac{8x - 3}{x + 5}$

27) $\frac{x - 3}{x - 4}$

28) $\frac{14x - 7}{3x}$

29) $-\frac{8}{x + y}$

30) $\frac{x - 6}{x - 5}$

31) $\frac{4x^2 - 9x - 54}{(x - 5)(x - 6)(x - 2)}$

32) $\frac{8y - 7}{(y - 1)(y + 1)(y - 2)}$

33) $\frac{x^2 - 5x + 24}{(x - 4)(x + 4)(x + 1)}$

34) $\frac{x^2 - 4x + 20}{(x - 4)(x + 4)(x + 1)}$

35) $\frac{6m^2 - 41m + 36}{(m - 5)(m - 6)(m - 4)}$

36) $\frac{3m^2 - 11m + 5}{(m + 1)(m - 4)(m + 5)}$

37) $\frac{6x^2 - 15x - 13}{(x - 2)(x - 3)(x - 1)}$

38) $\frac{10x - 8}{(x - 1)(x + 1)(x - 2)}$

39) $r(r + 6)^2$

40) $m(m - 3)(m + 5)$

41) $(x - 6)(x - 3)(x + 6)$

42) $2(x - 3)(x - 3)$

43) $(11x - 15)(11x + 15)$

44) $23x(x - 5)$

45) $23x(x + 3)$

46) $x(x + 9)(x - 9)$

47) $3a(a - 6)$

48) $7a(a - 3)$

49) $48x^2y$

50) $\frac{-25(x - 6)}{x(x + 5)(x - 5)}$

51) $\frac{4a + 5b}{a + b}$

52) $\frac{10}{x}$

53) $\frac{3x - 2}{x - 1}$

54) $\frac{151x^2 + 125x + 46}{60(x - 2)(x + 1)(x + 2)}$

55) $\frac{2x^2 - x - 5}{(x - 9)(x + 4)(x - 4)}$

56) $\frac{-3r - 20s}{(2r + s)(r - 2s)(5r - s)}$

57) $\frac{21m - 11p}{(2m + p)(m - 5p)(6m - p)}$

58) $\frac{3}{20}$D

59) $\frac{1}{10}$D

60) $\frac{1}{6}$D

61) $\frac{3}{68}$D

62) $\frac{30x - 56}{x(x - 4)}$ feet

63) $\frac{-2x - 36}{(x + 6)(x - 6)}$ inches

64) $\frac{1}{6}$D

65) $\frac{14x - 12}{x(x - 3)}$ feet

66) $\frac{2}{7}$D

67) $\frac{3}{25}$D

68) $\frac{5}{24}$D

69) $\frac{1}{24}$D

70) $\frac{22x - 80}{x(x - 8)}$ feet

71) $\frac{2x - 36}{(x + 6)(x - 6)}$ inches

72) $\frac{5}{24}$D

73) $\frac{20x - 12}{x(x - 2)}$ feet