Unit 3 – Operations with Fractions

Grade 8 Mathematics
Exam Review

1. Multiply. $4 \times \frac{1}{4}$

2. Multiply. $7 \times \frac{2}{7}$

3. Multiply. $\frac{3}{11} \times 3$

4. Multiply. $2 \times \frac{7}{12}$

5. Evaluate. $\frac{2}{5} + \frac{2}{5} + \frac{2}{5} + \frac{2}{5}$

6. Find $\frac{7}{9}$ of 27.

7. Suppose you have 28 muffins. How many muffins are left after you give a friend $\frac{1}{4}$ of them?

8. Find this product. $\frac{7}{8} \times \frac{8}{9}$

9. Find this product. $\frac{4}{5} \times \frac{15}{20}$

10. Multiply. $\frac{1}{3} \times \frac{5}{8}$

11. Multiply. $\frac{4}{6} \times \frac{1}{11}$

12. Multiply: $\frac{4}{5} \times \frac{6}{7}$

13. Find the reciprocal of $\frac{2}{11}$.

14. Find the common factors of 9 and 18.

15. Multiply: $\frac{8}{9} \times \frac{7}{16}$

16. The world's largest ruby crystal measures $12\frac{1}{4}$ cm $\times 11\frac{1}{4}$ cm $\times 13\frac{2}{5}$ cm.

Write the mixed numbers in these dimensions as improper fractions.

17. Two-fifths of Aika's stamp collection are European stamps.
One-half of her European stamps are from France.
What fraction of Aika's stamps are from France?

18. Write $\frac{39}{8}$ as a mixed number.

19. Multiply. $\frac{1}{6} \times 5\frac{2}{7}$

20. Multiply. $1\frac{1}{3} \times 2\frac{1}{3}$

21. Multiply. $2\frac{1}{4} \times 2\frac{1}{4}$

22. Multiply. $2\frac{3}{4} \times 3\frac{1}{3}$

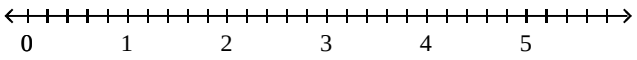
23. Multiply. $1\frac{2}{3} \times 4\frac{1}{4}$

24. Find the area of a rectangle with length $12\frac{1}{3}$ m and width $1\frac{1}{3}$ m.

25. At a warehouse, boxes of merchandise are piled in stacks of 10. Each box is $3\frac{1}{8}$ cm tall.

Find the height of one stack of boxes.

26. Use the number line to find this quotient. $6 \div \frac{1}{5}$



27. Find this quotient. $8 \div \frac{1}{3}$

28. Find this quotient. $3 \div \frac{2}{5}$

29. Find this quotient. $\frac{3}{5} \div 2$

30. Find this quotient. $8 \div \frac{4}{7}$

31. Find this quotient. $\frac{8}{12} \div 4$

32. Paige spends equal amounts of time on the homework of each subject.
She spends altogether 1 h on her homework.
If Paige spends $\frac{1}{4}$ h on French, how many subjects does she study?

33. Brenda has $\frac{5}{6}$ of a pie to divide evenly among 4 people.
What fraction of a pie does each person get?

34. Steve's home is 3 km from school. This is $\frac{1}{3}$ the distance Mike's home is from school.
How far is Mike's home from school?

35. Find this quotient. $\frac{5}{3} \div \frac{15}{7}$

36. Divide. $\frac{1}{4} \div \frac{3}{20}$

37. Divide. $\frac{3}{10} \div \frac{7}{6}$

38. Divide. $\frac{9}{11} \div \frac{1}{4}$

39. Find the value of $\square$ that makes this statement true.
$\frac{7}{4} \div \square = 7$

40. Divide $\frac{3}{5}$ by its reciprocal.

41. Write $3\frac{5}{6}$ as an improper fraction.

42. Divide. $2\frac{2}{7} \div \frac{2}{9}$

43. Divide. $2\frac{2}{3} \div \frac{2}{5}$

44. Divide. $2\frac{1}{3} \div 2\frac{1}{2}$

45. Divide. $1\frac{1}{5} \div 5\frac{1}{4}$

46. Divide. $2\frac{1}{3} \div 1\frac{4}{5}$

47. You have $2\frac{2}{3}$ cups of dried fruit to divide evenly among 5 children.
How many cups of fruit will each child receive?

48. Jay needs $1\frac{1}{4}$ cups of flour for a batch of cookies.
How many batches can he make with 12 cups of flour?

49. Melanie has a piece of cloth that is $4\frac{1}{4}$ m long.
How many $\frac{1}{2}$-m pieces can be cut from the cloth?

50. Mr. Johnston needs a shelf to hold a set of textbooks. Each book is $3\frac{3}{4}$ cm wide.
How many books will fit on an 86 cm wide shelf?

51. What operation would you use to solve this problem?
Josh mixed $3\frac{1}{2}$ cups of flour with $1\frac{1}{4}$ cups of sugar to make a cake. How much flour and sugar did he mix?

52. Patrice mixed $2\frac{1}{3}$ cans of yellow paint with $\frac{3}{4}$ of a can of white paint. How much paint did he mix?

53. Len ate $\frac{2}{5}$ and Jessie ate $\frac{1}{3}$ of a bag of candies. What fraction of the candies was left?

54. Belinda gets $1\frac{3}{4}$ h for lunch. She spends $\frac{1}{3}$ of her lunch time walking for exercise.
How much time does Belinda spend walking?

55. How much money is $\frac{1}{5}$ of $\frac{1}{3}$ of $840?

56. Which operation would you do first?
$\frac{5}{6} \times \left(\frac{6}{7} + \frac{7}{8}\right) \div \frac{8}{7} - \frac{5}{6}$

57. Which operation would you do first?
$\left(\frac{3}{4} - \frac{5}{6}\right) \times \left(\frac{6}{5} - \frac{3}{4}\right) \div \frac{5}{6} + \frac{3}{4}$

58. Evaluate. $\frac{2}{3} \times \frac{7}{8} - \frac{1}{3}$

59. Evaluate. $\frac{7}{10} - \frac{1}{6} \div \frac{2}{3}$

60. Evaluate. $\frac{3}{5} \div \frac{3}{5} - \frac{3}{5}$

61. Add: $\frac{1}{11} + \frac{1}{22}$

62. Add: $\frac{1}{5} + \frac{1}{10}$

63. Add: $\frac{2}{7} + \frac{2}{3}$

64. Add: $\frac{1}{8} + \frac{1}{10}$

65. Add: $\frac{4}{5} + \frac{8}{9}$

66. Sal paints a wall in his art classroom. He uses $\frac{3}{4}$ L of blue paint and $\frac{2}{3}$ L of white paint.
How much paint does he use?

67. Add: $\frac{6}{13} + \frac{9}{13} + \frac{4}{13}$

68. Add: $\frac{1}{3}+\frac{3}{6}+\frac{2}{12}$

69. You cut vegetables for a stew. You have $\frac{3}{4}$ cup carrots, $\frac{2}{3}$ cup onions, and $\frac{1}{2}$ cup peppers. About how many cups of vegetables do you have in all?

70. Subtract: $\frac{4}{9}-\frac{1}{9}$

71. Subtract: $\frac{7}{10}-\frac{1}{5}$

72. Subtract: $\frac{1}{2}-\frac{3}{7}$

73. Which subtraction equation is incorrect?

P: $\frac{4}{5}-\frac{3}{10}=\frac{1}{2}$

Q: $\frac{2}{3}-\frac{1}{6}=\frac{1}{2}$

R: $\frac{5}{8}-\frac{1}{4}=\frac{1}{2}$

S: $\frac{5}{6}-\frac{1}{3}=\frac{1}{2}$

74. Subtract $\frac{1}{6}$ from $\frac{3}{4}$.

75. Subtract: $1-\frac{10}{11}$

76. Write $3\frac{5}{6}$ as an improper fraction.

77. Write $2\frac{4}{6}$ as an improper fraction in simplest form.

78. Add: $3\frac{1}{5}+2\frac{1}{5}$

79. Add: $2\frac{1}{2}+\frac{3}{4}$

80. Add: $\frac{3}{4}+5\frac{7}{8}$

81. What is the lowest common denominator you could use to add $3\frac{1}{6}$ and $2\frac{2}{3}$?

82. Add: $4\frac{1}{6}+3\frac{2}{3}$

83. Add: $\frac{15}{8}+\frac{7}{4}$

84. Subtract: $5\frac{5}{9}-2\frac{1}{9}$

85. Subtract: $4\frac{2}{5}-1\frac{1}{3}$

86. Subtract: $4 - \frac{1}{3}$

87. Subtract: $6 - \frac{3}{4}$

88. Subtract: $3\frac{3}{4} - 2\frac{1}{2}$

89. Subtract: $4\frac{1}{3} - 1\frac{5}{6}$

90. Azal promised to practise his guitar for $7\frac{1}{2}$ h this week. He practised $1\frac{5}{8}$ h on Monday and $1\frac{1}{4}$ h on Tuesday. How long does he still have to practise?

Unit 3 - Answer Section

1. 1

2. 2

3. $\frac{9}{11}$

4. $\frac{7}{6}$

5. $\frac{8}{5}$

6. 21

7. 21 muffins

8. $\frac{7}{9}$

9. $\frac{3}{5}$

10. $\frac{5}{24}$

11. $\frac{2}{33}$

12. $\frac{24}{35}$

13. $\frac{11}{2}$

14. 3, 9

15. $\frac{7}{18}$

16. $\frac{49}{4} \times \frac{45}{4} \times \frac{67}{5}$

17. $\frac{1}{5}$

18. $4\frac{7}{8}$

19. $\frac{37}{42}$

20. $3\frac{1}{9}$

21. $5\frac{1}{16}$

22. $9\frac{1}{6}$

23. $7\frac{1}{12}$

24. $16\frac{4}{9}$ m^2

25. $31\frac{1}{4}$ cm

26. 30

27. 24

28. $7\frac{1}{2}$

29. $\frac{3}{10}$

30. 14

31. $\frac{1}{6}$

32. 4 subjects

33. $\frac{5}{24}$

34. 9 km

35. $\frac{7}{9}$

36. $\frac{5}{3}$

37. $\frac{9}{35}$

38. $3\frac{3}{11}$

39. $\frac{1}{4}$

40. $\frac{9}{25}$

41. $\frac{23}{6}$

42. $10\frac{2}{7}$

43. $6\frac{2}{3}$

44. $\frac{14}{15}$

45. $\frac{8}{35}$

46. $1\frac{8}{27}$

47. $\frac{8}{15}$

48. 9 batches

49. 8 pieces

50. 22 books

51. Addition

52. $3\frac{1}{12}$

53. $\frac{4}{15}$

54. $\frac{7}{12}$ h

55. $56

56. Addition

57. Subtraction

58. $\frac{1}{4}$

59. $\frac{9}{20}$

60. $\frac{2}{5}$

61. $\frac{3}{22}$

62. $\frac{3}{10}$

63. $\frac{20}{21}$

64. $\frac{9}{40}$

65. $1\frac{31}{45}$

66. $1\frac{5}{12}$ L

67. $1\frac{6}{13}$

68. 1

69. 2 cups

70. $\frac{1}{3}$

71. $\frac{1}{2}$

72. $\frac{1}{14}$

73. R

74. $\frac{7}{12}$

75. $\frac{1}{11}$

76. $\frac{23}{6}$

77. $\frac{8}{3}$

78. $5\frac{2}{5}$

79. $3\frac{1}{4}$

80. $6\frac{5}{8}$

81. 6

82. $7\frac{5}{6}$

83. $3\frac{5}{8}$

84. $3\frac{4}{9}$

85. $3\frac{1}{15}$

86. $3\frac{2}{3}$

87. $5\frac{1}{4}$

88. $1\frac{1}{4}$

89. $2\frac{1}{2}$

90. $4\frac{5}{8}$