

Grade 9 Mathematics Preparation Solution Booklet



The following worksheets are designed to help students practice and review key concepts and skills from previous mathematics courses that are needed for success with the new concepts introduced in high school.

Adding and Subtracting Fractions (A) Answers

Find the value of each expression in lowest terms.

$$\begin{aligned} 1. \quad & \frac{7}{4} - \frac{8}{5} \\ & = \frac{3}{20} \end{aligned}$$

$$\begin{aligned} 5. \quad & \frac{3}{2} - \frac{9}{7} \\ & = \frac{3}{14} \end{aligned}$$

$$\begin{aligned} 9. \quad & \frac{4}{3} - \frac{2}{5} \\ & = \frac{14}{15} \end{aligned}$$

$$\begin{aligned} 2. \quad & \frac{23}{2} + \frac{9}{4} \\ & = \frac{55}{4} = 13\frac{3}{4} \end{aligned}$$

$$\begin{aligned} 6. \quad & \frac{7}{10} + \frac{2}{5} \\ & = \frac{11}{10} = 1\frac{1}{10} \end{aligned}$$

$$\begin{aligned} 10. \quad & \frac{5}{2} + \frac{2}{3} \\ & = \frac{19}{6} = 3\frac{1}{6} \end{aligned}$$

$$\begin{aligned} 3. \quad & \frac{8}{3} - \frac{3}{2} \\ & = \frac{7}{6} = 1\frac{1}{6} \end{aligned}$$

$$\begin{aligned} 7. \quad & \frac{14}{5} - \frac{4}{3} \\ & = \frac{22}{15} = 1\frac{7}{15} \end{aligned}$$

$$\begin{aligned} 11. \quad & \frac{9}{8} + \frac{5}{6} \\ & = \frac{47}{24} = 1\frac{23}{24} \end{aligned}$$

$$\begin{aligned} 4. \quad & \frac{5}{2} - \frac{13}{12} \\ & = \frac{17}{12} = 1\frac{5}{12} \end{aligned}$$

$$\begin{aligned} 8. \quad & \frac{17}{7} - \frac{5}{3} \\ & = \frac{16}{21} \end{aligned}$$

$$\begin{aligned} 12. \quad & \frac{9}{7} - \frac{5}{6} \\ & = \frac{19}{42} \end{aligned}$$

Adding and Subtracting Mixed Fractions (A) Answers

Find the value of each expression in lowest terms.

$$\begin{aligned} 1. \quad & 2\frac{1}{5} + 1\frac{3}{4} \\ & = \frac{79}{20} = 3\frac{19}{20} \end{aligned}$$

$$\begin{aligned} 5. \quad & 1\frac{1}{2} + 2\frac{3}{5} \\ & = \frac{41}{10} = 4\frac{1}{10} \end{aligned}$$

$$\begin{aligned} 9. \quad & 3\frac{1}{2} - 1\frac{1}{2} \\ & = 2 \end{aligned}$$

$$\begin{aligned} 2. \quad & 3\frac{1}{2} - 2\frac{2}{3} \\ & = \frac{5}{6} \end{aligned}$$

$$\begin{aligned} 6. \quad & 3\frac{1}{2} - 2\frac{5}{9} \\ & = \frac{17}{18} \end{aligned}$$

$$\begin{aligned} 10. \quad & 5\frac{1}{2} + 5\frac{1}{4} \\ & = \frac{43}{4} = 10\frac{3}{4} \end{aligned}$$

$$\begin{aligned} 3. \quad & 3\frac{1}{2} - 3\frac{1}{2} \\ & = 0 \end{aligned}$$

$$\begin{aligned} 7. \quad & 2\frac{3}{4} + 1\frac{1}{5} \\ & = \frac{79}{20} = 3\frac{19}{20} \end{aligned}$$

$$\begin{aligned} 11. \quad & 1\frac{10}{11} - 1\frac{1}{3} \\ & = \frac{19}{33} \end{aligned}$$

$$\begin{aligned} 4. \quad & 5\frac{3}{4} - 5\frac{1}{4} \\ & = \frac{1}{2} \end{aligned}$$

$$\begin{aligned} 8. \quad & 3\frac{1}{4} - 2\frac{3}{8} \\ & = \frac{7}{8} \end{aligned}$$

$$\begin{aligned} 12. \quad & 1\frac{5}{12} + 3\frac{1}{3} \\ & = \frac{19}{4} = 4\frac{3}{4} \end{aligned}$$

Multiplying and Dividing Fractions (A) Answers

Find the value of each expression in lowest terms.

$$1. \frac{1}{2} \times \frac{5}{4} \\ = \frac{5}{8}$$

$$6. \frac{1}{4} \times \frac{5}{3} \\ = \frac{5}{12}$$

$$11. \frac{10}{3} \times \frac{11}{6} \\ = \frac{55}{9} = 6\frac{1}{9}$$

$$2. \frac{1}{6} \div \frac{8}{11} \\ = \frac{11}{48}$$

$$7. \frac{11}{2} \div \frac{1}{2} \\ = 11$$

$$12. \frac{1}{2} \div \frac{1}{2} \\ = 1$$

$$3. \frac{1}{3} \div \frac{13}{9} \\ = \frac{3}{13}$$

$$8. \frac{4}{3} \div \frac{11}{12} \\ = \frac{16}{11} = 1\frac{5}{11}$$

$$13. \frac{14}{9} \times \frac{7}{10} \\ = \frac{49}{45} = 1\frac{4}{45}$$

$$4. \frac{13}{4} \div \frac{1}{2} \\ = \frac{13}{2} = 6\frac{1}{2}$$

$$9. \frac{1}{3} \times \frac{20}{9} \\ = \frac{20}{27}$$

$$14. \frac{15}{8} \times \frac{7}{6} \\ = \frac{35}{16} = 2\frac{3}{16}$$

$$5. \frac{17}{6} \div \frac{3}{5} \\ = \frac{85}{18} = 4\frac{13}{18}$$

$$10. \frac{13}{7} \times \frac{14}{11} \\ = \frac{26}{11} = 2\frac{4}{11}$$

$$15. \frac{3}{2} \div \frac{4}{9} \\ = \frac{27}{8} = 3\frac{3}{8}$$

Multiplying and Dividing Mixed Fractions (A) Answers

Find the value of each expression in lowest terms.

$$\begin{aligned} 1. \quad & 3\frac{2}{7} \div 1\frac{1}{4} \\ & = \frac{92}{35} = 2\frac{22}{35} \end{aligned}$$

$$\begin{aligned} 6. \quad & 1\frac{1}{3} \times 1\frac{2}{3} \\ & = \frac{20}{9} = 2\frac{2}{9} \end{aligned}$$

$$\begin{aligned} 11. \quad & 1\frac{3}{8} \div 1\frac{1}{12} \\ & = \frac{33}{26} = 1\frac{7}{26} \end{aligned}$$

$$\begin{aligned} 2. \quad & 1\frac{2}{3} \div 3\frac{1}{3} \\ & = \frac{1}{2} \end{aligned}$$

$$\begin{aligned} 7. \quad & 1\frac{1}{3} \times 2\frac{1}{5} \\ & = \frac{44}{15} = 2\frac{14}{15} \end{aligned}$$

$$\begin{aligned} 12. \quad & 2\frac{7}{8} \div 5\frac{1}{2} \\ & = \frac{23}{44} \end{aligned}$$

$$\begin{aligned} 3. \quad & 2\frac{1}{4} \div 1\frac{1}{2} \\ & = \frac{3}{2} = 1\frac{1}{2} \end{aligned}$$

$$\begin{aligned} 8. \quad & 2\frac{1}{7} \div 2\frac{1}{2} \\ & = \frac{6}{7} \end{aligned}$$

$$\begin{aligned} 13. \quad & 3\frac{2}{3} \div 1\frac{1}{6} \\ & = \frac{22}{7} = 3\frac{1}{7} \end{aligned}$$

$$\begin{aligned} 4. \quad & 6\frac{1}{2} \div 2\frac{2}{3} \\ & = \frac{39}{16} = 2\frac{7}{16} \end{aligned}$$

$$\begin{aligned} 9. \quad & 1\frac{3}{11} \div 2\frac{1}{3} \\ & = \frac{6}{11} \end{aligned}$$

$$\begin{aligned} 14. \quad & 1\frac{3}{8} \times 3\frac{1}{3} \\ & = \frac{55}{12} = 4\frac{7}{12} \end{aligned}$$

$$\begin{aligned} 5. \quad & 2\frac{1}{10} \div 2\frac{3}{5} \\ & = \frac{21}{26} \end{aligned}$$

$$\begin{aligned} 10. \quad & 3\frac{1}{2} \div 2\frac{3}{4} \\ & = \frac{14}{11} = 1\frac{3}{11} \end{aligned}$$

$$\begin{aligned} 15. \quad & 1\frac{4}{11} \div 1\frac{1}{4} \\ & = \frac{12}{11} = 1\frac{1}{11} \end{aligned}$$

Multiplying Fractions (A) Answers

Find the value of each expression.

$$\begin{aligned} 1. \quad & \frac{5}{6} \times \frac{1}{2} \\ & = \frac{5}{12} \end{aligned}$$

$$\begin{aligned} 5. \quad & \frac{7}{9} \times \frac{1}{2} \\ & = \frac{7}{18} \end{aligned}$$

$$\begin{aligned} 9. \quad & \frac{1}{2} \times \frac{1}{3} \\ & = \frac{1}{6} \end{aligned}$$

$$\begin{aligned} 2. \quad & \frac{4}{9} \times \frac{2}{3} \\ & = \frac{8}{27} \end{aligned}$$

$$\begin{aligned} 6. \quad & \frac{5}{11} \times \frac{1}{3} \\ & = \frac{5}{33} \end{aligned}$$

$$\begin{aligned} 10. \quad & \frac{1}{8} \times \frac{1}{4} \\ & = \frac{1}{32} \end{aligned}$$

$$\begin{aligned} 3. \quad & \frac{3}{5} \times \frac{3}{4} \\ & = \frac{9}{20} \end{aligned}$$

$$\begin{aligned} 7. \quad & \frac{1}{3} \times \frac{5}{6} \\ & = \frac{5}{18} \end{aligned}$$

$$\begin{aligned} 11. \quad & \frac{1}{2} \times \frac{5}{6} \\ & = \frac{5}{12} \end{aligned}$$

$$\begin{aligned} 4. \quad & \frac{5}{6} \times \frac{1}{3} \\ & = \frac{5}{18} \end{aligned}$$

$$\begin{aligned} 8. \quad & \frac{1}{2} \times \frac{1}{6} \\ & = \frac{1}{12} \end{aligned}$$

$$\begin{aligned} 12. \quad & \frac{1}{3} \times \frac{4}{5} \\ & = \frac{4}{15} \end{aligned}$$

Dividing Fractions (A) Answers

Find the value of each expression in lowest terms.

$$\begin{aligned} 1. \quad & \frac{1}{5} \div \frac{2}{3} \\ & = \frac{3}{10} \end{aligned}$$

$$\begin{aligned} 5. \quad & \frac{1}{3} \div \frac{3}{4} \\ & = \frac{4}{9} \end{aligned}$$

$$\begin{aligned} 9. \quad & \frac{4}{9} \div \frac{1}{2} \\ & = \frac{8}{9} \end{aligned}$$

$$\begin{aligned} 2. \quad & \frac{1}{3} \div \frac{7}{10} \\ & = \frac{10}{21} \end{aligned}$$

$$\begin{aligned} 6. \quad & \frac{2}{9} \div \frac{3}{4} \\ & = \frac{8}{27} \end{aligned}$$

$$\begin{aligned} 10. \quad & \frac{1}{4} \div \frac{7}{9} \\ & = \frac{9}{28} \end{aligned}$$

$$\begin{aligned} 3. \quad & \frac{1}{2} \div \frac{2}{3} \\ & = \frac{3}{4} \end{aligned}$$

$$\begin{aligned} 7. \quad & \frac{1}{3} \div \frac{3}{4} \\ & = \frac{4}{9} \end{aligned}$$

$$\begin{aligned} 11. \quad & \frac{3}{7} \div \frac{5}{9} \\ & = \frac{27}{35} \end{aligned}$$

$$\begin{aligned} 4. \quad & \frac{1}{5} \div \frac{2}{7} \\ & = \frac{7}{10} \end{aligned}$$

$$\begin{aligned} 8. \quad & \frac{1}{7} \div \frac{1}{5} \\ & = \frac{5}{7} \end{aligned}$$

$$\begin{aligned} 12. \quad & \frac{1}{4} \div \frac{8}{9} \\ & = \frac{9}{32} \end{aligned}$$

Order of Operations (A) Answers

Perform the operations in the correct order.

$$1. \begin{array}{l} 2 \times 5 - 7 \\ = 3 \end{array}$$

$$6. \begin{array}{l} 5 \div (-1)^4 \\ = 5 \end{array}$$

$$11. \begin{array}{l} 8 \div 2 - (-3) \\ = 7 \end{array}$$

$$2. \begin{array}{l} 9 \times (3 + (-1)) \\ = 18 \end{array}$$

$$7. \begin{array}{l} (-1)^{(-2) \times (-8)} \\ = 1 \end{array}$$

$$12. \begin{array}{l} 4 \times (-1)^2 \\ = 4 \end{array}$$

$$3. \begin{array}{l} -8 - 5 + (-5) \\ = -18 \end{array}$$

$$8. \begin{array}{l} -10 - 2 \div (-2) \\ = -9 \end{array}$$

$$13. \begin{array}{l} 9 + 2 - (-5) \\ = 16 \end{array}$$

$$4. \begin{array}{l} -3 + 6 + (-9) \\ = -6 \end{array}$$

$$9. \begin{array}{l} -4 + (-9) \div (-1) \\ = 5 \end{array}$$

$$14. \begin{array}{l} 1 \times 1 + (-9) \\ = -8 \end{array}$$

$$5. \begin{array}{l} (-5) \times (-1) - (-1) \\ = 6 \end{array}$$

$$10. \begin{array}{l} (7 + (-4)) \div (-3) \\ = -1 \end{array}$$

$$15. \begin{array}{l} -1 - (-9 + (-3)) \\ = 11 \end{array}$$

Order of Operations (A) Answers

Perform the operations in the correct order.

$$1. (10 \div 2 - 3)^2 \\ = 4$$

$$6. 4 + 10 - (5 + 7) \\ = 2$$

$$11. (6 - 4)^{6-4} \\ = 4$$

$$2. 9 + (6 \div 6)^9 \\ = 10$$

$$7. 8 \times (8 - 8) \div 9 \\ = 0$$

$$12. 3^2 + 4 \div 2 \\ = 11$$

$$3. (5 - 8 \div 8) \times 4 \\ = 16$$

$$8. 5 + 6 - (8 - 6) \\ = 9$$

$$13. 2^{9 \div (8-5)} \\ = 8$$

$$4. 5 \times (6 \div 6)^3 \\ = 5$$

$$9. 6 \div 1^{3 \div 1} \\ = 6$$

$$14. 1^{6-3 \div 3} \\ = 1$$

$$5. (2 \div 2 \times 4)^2 \\ = 16$$

$$10. 2^{8-6} + 9 \\ = 13$$

$$15. 4^{2 \div 1} + 2 \\ = 18$$