

**Instructions:** Record your answers to each of these problems directly on this page. Do the work on a separate page and attach these pages to this one. You should do the work by hand, but you may check your work with a calculator.

1. Convert to an improper fraction

a)  $-10\frac{1-31}{3\ 3}$     b)  $20\frac{3\ 103}{5\ 5}$     c)  $8\frac{1\ 17}{2\ 2}$     d)  $-15\frac{2\ 47}{3\ 3}$     e)  $6\frac{2\ 32}{5\ 5}$

2. Add or Subtract the mixed numerals as required.

a)  $19 - 5\frac{3}{4}$     b)  $9\frac{3}{5} - 3\frac{1}{2}$     c)  $6\frac{3}{8} + 10\frac{5}{6}$     d)  $23\frac{5}{16} - 14\frac{7}{12}$   
 $53\frac{3}{4} = 13\frac{3}{4}$      $6\frac{1}{10} = 6\frac{1}{10}$      $\frac{413}{24} = 17\frac{5}{24}$      $\frac{419}{48} = 8\frac{35}{48}$

3. Multiply or Divide the mixed numerals.

a)  $-2\frac{3}{10} \cdot 4\frac{2}{5}$     b)  $5\frac{4}{5} \div 2\frac{1}{2}$     c)  $\frac{5\frac{1}{2} - 2\frac{1}{3}}{4\frac{3}{16}}$      $\frac{19/6}{67/16} = \frac{152}{201}$   
 $-253/25 = -10\frac{3}{25}$      $\frac{58}{25} = 2\frac{8}{25}$

4. Evaluate and simplify to lowest terms.

a.  $4\frac{1}{2} \div 2\frac{1}{2} + 8 - 4 \div \frac{1}{2} = \frac{9}{5} = 1\frac{4}{5}$     b.  $\sqrt{1\frac{9}{25}} + \frac{2}{3} - \frac{1}{2\sqrt{4}}$   
 $\frac{153}{21} \rightarrow 7\frac{2}{7}$      $\frac{\sqrt{34}}{25} + \frac{2}{3} - \frac{1}{7} = \frac{\sqrt{34}}{25} + \frac{11}{48} = \frac{\sqrt{34}}{6} + \frac{11}{48}$   
 $= \frac{48\sqrt{34} + 55}{240}$

5. Convert improper fractions to mixed numbers

a.  $\frac{15}{7} \rightarrow 2\frac{1}{7}$   
 b.  $\frac{684}{9} \rightarrow 76$

6. Convert mixed numbers to improper fractions

a.  $5\frac{3}{4} \rightarrow \frac{23}{4}$     b.  $12\frac{1}{7} \rightarrow \frac{85}{7}$

7. Operations on fractions and mixed numbers

a.  $3\frac{7}{15} + 2\frac{11}{12} + 11\frac{1}{4} \rightarrow \frac{529}{30} = 17\frac{19}{30}$     c.  $3\frac{1}{3} - 2\frac{1}{3} = \frac{13}{15}$   
 b.  $2\frac{1}{3} \times 3\frac{3}{4} \rightarrow \frac{55}{12} = 4\frac{7}{12}$     d.  $27\frac{1}{2} \div \frac{5}{8} = 44$

8. Suppose a company orders  $25\frac{1}{2}$  cases of paper towels and  $\frac{2}{3}$  of these paper towels are going to one location and  $\frac{1}{3}$  are going to a second location. How many cases does each location receive?

$17$  goes to location 1,  
 $8\frac{1}{2}$  goes to location 2

9. Jean has  $24\frac{1}{2}$  yards of material and she purchased to make dresses for the girls in the elementary school choir. If each dress requires  $2\frac{1}{4}$  yards of material, how many dresses can she make? *10 dresses w/ some leftover (7/8 of a dress extra)*

10. Suppose a board is  $17\frac{1}{8}$  inches long and we are going to cut a piece off that is  $8\frac{1}{2}$  inches long, how long is the piece that is left?  *$6\frac{1}{8} = 8\frac{7}{8}$  in*

11. Round to the nearest hundredth.

a) 0.6751 *0.68*      b) -0.10346 *-0.10*

12. Add.  $47.8 + 219.852 + 43.59 + 666.713$  *977.955*

13. Subtract.  $51.31 - 2.291$  *49.019*

14. Simplify.  $3.2r - 4.1t + 5.6t - 1.9r = 1.3r + 1.5t$

15. Multiply.  $0.984 \times 3.3 = 3.2472$

16. Divide.  $2.7 \overline{)129.6} = 48$

17. Simplify.  $5.5^2 \times [(6 - 7.8) \div 0.06 + 0.12] = -903.87$

18. Estimate the value of  $74.68 \div 24.7$  to the nearest whole number.

$$75 \div 25 = 3$$

19. Compute the following problems without a calculator.

a.  $2\frac{4}{7} + 6\frac{9}{10} = \frac{663}{70} = 9\frac{33}{70}$

g.  $3\frac{1}{2} - 1\frac{1}{13} = \frac{63}{26} = 2\frac{11}{26}$

b.  $6\frac{1}{8} - 4\frac{1}{2} = 1\frac{3}{8}$

h.  $2\frac{1}{2} \times 4\frac{7}{8} = 195/16 = 12\frac{3}{16}$

c.  $12\frac{1}{2} \div 3\frac{1}{4} = 50/13 = 3\frac{11}{13}$

d.  $(2 \times 4) + (5 \times 6) + (10 - 4 + 6) - 13 = 37$

e.  $56 \times 3 - (19 \div 3) = 485/3 = 161\frac{2}{3}$

f.  $\frac{2}{3} + 5\frac{7}{6} + 14\frac{5}{8} = 517/24 + 21\frac{11}{24}$

i.  $3\frac{3}{16} \times 12\frac{4}{5} = \frac{204}{5} = 40\frac{4}{5}$

20. Calculate the following problems without a calculator.

a.  $14.567 + 37.890 + 4.576 + 2.3 + 3.0 = 62.333$

b.  $0.98421 - 0.68315 = 0.30106$

c.  $987.035 \times 0.025 = 24.675875$

d.  $12 \div 36.60 = \frac{20}{61} \approx 0.3278688525...$

21. Write the expressions as decimals.

a. Thirty and two hundred seventy-nine thousandths *30.279*

b. Twenty-nine and eighty-one hundredths *29.81*

22. Write the decimal in words.

a. 0.479

*four hundred seventy-nine thousandths*

b. -31.4

*negative thirty-one and four tenths*