Summer Packet - 6th into 7th grade Name Answer Key-2009

Fractions:

Adding and Subtracting Fractions

Remember, the denominators need to be the same when adding and subtracting fractions. Also, sometimes you will need to rename fractions in order to subtract. Always reduce answers to lowest terms.

Example: $\frac{1}{6}+\frac{1}{3}=\frac{1}{6}+\frac{2}{6}=\frac{3}{6}=\frac{1}{2}$ $1\frac{1}{2}-\frac{7}{8}=$ $1\frac{4}{8}-\frac{7}{8}=$ $\frac{12}{8}-\frac{7}{8}=$ $\frac{5}{8}$

1) $\frac{11}{12}+\frac{9}{12}=$ $1\frac{2}{3}$

$\frac{20}{12}=1\frac{8}{12}$

$1\frac{2}{3}$

2) $\frac{19}{20}-\frac{9}{20}=$ ____

3) $1\frac{23}{25}-\frac{8}{25}=$ $1\frac{3}{5}$

$1\frac{15}{25}$

$1\frac{3}{5}$

4) $\frac{2}{4}+\frac{3}{5}=$ ____

5) $\frac{8}{9}-\frac{5}{12}=$ $\frac{17}{36}$

$\frac{32}{36}-\frac{15}{36}=\frac{17}{36}$

6) $1\frac{1}{3}+\frac{4}{8}=$ ____

7) $2\frac{1}{3}-\frac{2}{5}=$ $1\frac{14}{15}$

$2\frac{5}{15}-\frac{6}{15}=$

$1\frac{20}{15}-\frac{6}{15}=1\frac{14}{15}$

8) $\frac{2}{6}+\frac{3}{9}=$ ____

9) $\frac{11}{14}-\frac{1}{6}=$ $\frac{13}{21}$

$\frac{33}{42}-\frac{7}{42}=\frac{26}{42}=$

$\frac{13}{21}$

Multiplication and Division of Fractions and Mixed Numbers

Remember, when multiplying fractions and mixed numbers there is no need to have a common denominator. However, you do need to change all mixed numbers into improper fractions. Always reduce answers to lowest terms.

Also, remember that when dividing fractions you need to change the problem into a multiplication problem by changing division into multiplication and inverting the second number.

$2\frac{1}{4}\cdot\frac{2}{3}=\frac{9}{4}\cdot\frac{2}{3}=\frac{18}{12}=\frac{3}{2}=1\frac{1}{2}$

$3\frac{2}{3}\div 4\frac{1}{2}=\frac{11}{3}\div\frac{9}{2}=\frac{11}{3}\cdot\frac{2}{9}=\frac{22}{27}$

10) $\frac{3}{5}\cdot\frac{2}{4}=$____

11) $\frac{4}{5}\cdot\frac{2}{6}=$____

$\frac{8}{30}=\frac{4}{15}$

12) $2\frac{4}{5}\cdot 2\frac{2}{3}=$____

13) $7\frac{1}{5}\cdot\frac{2}{3}=$____

$\frac{36}{5}\cdot\frac{2}{3}=\frac{72}{15}$

$\frac{24}{5}=4\frac{4}{5}$

14) $3\cdot 4\frac{1}{6}=$____

15) $\frac{3}{5}\div\frac{10}{12}=$____

$\frac{3}{5}\cdot\frac{12}{10}=\frac{36}{50}=$

$\frac{18}{25}$

16) $9\div\frac{3}{7}=$____

17) $4\frac{1}{6}\div 8\frac{1}{5}=$____

$\frac{25}{6}\div\frac{41}{5}=$

$\frac{25}{6}\cdot\frac{5}{41}=\frac{125}{246}$

18) $3\frac{4}{5}\div 6\frac{1}{4}=$____

Fractions to Decimals to Percents

Fractions to Decimals: Use your division skills to turn a fraction into a decimal, remember to divide numerator by the denominator.

Example; $\frac{3}{4} = 3 \div 4 = 0.75$

Decimals to Fractions: Read the number using place value, decide if the number ends in the tenths, hundredths, thousandths etc., that will be your denominator. Reduce your fraction.

Example; 0.5 reads 5 tenths which is the fraction $\frac{5}{10} = \frac{1}{2}$

Decimals to Percents: Remember to multiply your decimal by 100 (which moves the decimal 2 places to the right) and than add the percent sign.

Example; 0.32 = 32%

Percents to Decimals: Reverse the procedure for decimals to percents;

Example; 45% = 0.45

Fraction	Decimal	Percent
19) $\frac{1}{4}$	20)	25%
$\frac{1}{2}$	21) .5	22)
23) $\frac{3}{5}$	0.6	24)
25) $\frac{9}{10}$	26)	90%
$\frac{5}{8}$	27) .625	28)

Comparing and Ordering Fractions and Decimals

Order the following lists in order from least to greatest. Create a number-line if you believe it would help you solve the problem.

29) $\frac{2}{3}, \frac{1}{6}, \frac{3}{4}, \frac{1}{8}, \frac{2}{5}$ $\frac{1}{8}, \frac{1}{6}, \frac{2}{5}, \frac{2}{3}, \frac{3}{4}$

30) $\frac{5}{8}, \frac{3}{5}, \frac{3}{4}, \frac{2}{6}, \frac{1}{4}$

31) $\frac{4}{9}, 0.35, \frac{4}{6}, 0.72, \frac{4}{5}$ $0.35, \frac{4}{9}, \frac{4}{6}, 0.72, \frac{4}{5}$

32) $\frac{7}{8}, 1\frac{1}{3}, \frac{5}{4}, \frac{8}{9}, \frac{3}{2}$

33) **0.79, 0.8, 0.08, 0.81, 0.079** 0.079, 0.08, 0.79, 0.8, 0.81

Mean, Median, Mode and Range

Calculate the mean, median, mode and range of the following set of data. Remember the mean is the mathematical average, the median is the middle number, the mode is the number that appears the most and the range is the difference between the highest and lowest number.

88, 87, 79, 89, 78, 95, 65, 99, 83, 88

34) Mean = _____

35) Median = 87.5

36) Mode = _____

37) Range = 34

87.5

99 95 89 88 87 83 79 65

99-65 = 34

Adding and Subtracting Decimals

When adding and subtracting decimals, always be sure to line up the decimal points. Remember, the decimal is located after the ones place in a whole number. Fill in zeros when needed.

38) 43.5+92.1= _____

39) 84.52+7.348= 91.868

$$\begin{array}{r} {}^{1}84.520 \\ +\ \ 7.348 \\ \hline 91.868 \end{array}$$

40) 74.3+6.65+2.008= _____

41) 53.97-4.24= 49.73

$$\begin{array}{r} {}^{4}\cancel{5}\overset{13}{3}.97 \\ -\ \ 4.24 \\ \hline 49.73 \end{array}$$

42) 0.56-0.37= _____

43) 89.2-7.53= 81.67

$$\begin{array}{r} 8\overset{8}{\cancel{9}}.\overset{11}{\cancel{2}}10 \\ -\ \ 7.53 \\ \hline 81.67 \end{array}$$

44) 11.825-9= _____

45) 7.02+6.29-8= 5.31

$$\begin{array}{r} 7.02 \\ +\ 6.29 \\ \hline 13.31 \\ -\ 8.00 \\ \hline 5.31 \end{array}$$

46) 16-0.8+2.7= _____

Multiplying Decimals

Multiplying decimals is the same as multiplying whole numbers. The key is to count the decimal places in each factor.

Step 1: Line up the digits

Step 2: Multiply as with whole numbers.

Step 3: Count the decimal places in each factor. The product (answer) has the same number of decimal places.

Remember, sometimes you have to add zeros as needed.

47) 2.08x0.9= 1.872

```
   2.08
 x  .90
 ------
 1.8720
```

48) 14.2x9.7= _____

49) 0.84x3.15= 2.646

```
    0.84
  x 3.15
  ------
     420
    0840
  +25200
  ------
   2.6460
```

50) 5.98x1.5= _____

51) 8.75x0.24= 2.1

```
    8.75
  x 0.24
  ------
   3500
  17500
  ------
   2.1000
```

52) 3.8x14.2= _____

53) 0.007x9= .063

```
   .007
 x    9
 ------
   .063
```

54) 3.6x2.09= _____

55) 14x0.376= 5.264

```
    0.376
  x    14
  ------
    1504
  + 3760
  ------
   5.264
```

Dividing Decimals

Example 1: Dividing a decimal by a whole number.

5.95 ÷ 7 =0.85

Step 1: Rewrite the problem as a long division problem and place the decimal in the quotient (answer). Remember, the first number (dividend) goes under the long division sign. The second number (divisor) goes on the outside.

Step 2: Divide as needed. Remember, no remainders.

Example 2: Dividing a decimal by a decimal.

20.8 ÷ 2.6 =8

Step 1: Rewrite the problem as a long division problem.

Step 2: If the divisor is a decimal, you must move the decimal point (using multiplication) to the right until it becomes a whole number.

Step 3: Move the decimal in the dividend the same number of times.

Step 4: Place the decimal in the quotient.

Step 5: Divide as needed. Remember, no remainders

56) 3.54 ÷ 6= _____

57) 9.12 ÷ 16= .57

```
      .57
16) 9.12
   -80
    112
   -112
       0
```

58) 15.12 ÷ 9= _____

59) 0.72 ÷ 0.06= 12

```
       12
.06) 0.72
   -  6
      12
    - 12
       0
```

60) 35.31 ÷ 0.55= _____

61) 12.24 ÷ 0.12= 102

```
      102
0.12) 12.24
    -12
     024
    - 24
       0
```

62) 7.45 ÷ 0.5= _____

63) 23.7 ÷ 0.08= 296.25

```
       296.25
0.08) 23.70.00
    -16
     77
    -72
      50
    - 48
      20
    - 16
```

64) 0.679 ÷ 0.2= _____

Comparing Fractions and Decimals

Insert < (less than), > (greater than) or = into the following comparisons.

65) $\frac{2}{5}$ < $\frac{7}{15}$

$\frac{6}{15}$

66) $\frac{5}{6}$ ____ $\frac{3}{4}$

67) $\frac{2}{3}$ = $\frac{4}{6}$

$\frac{4}{6}$

68) $\frac{8}{6}$ ____ $\frac{16}{13}$

69) $\frac{4}{5}$ = $\frac{8}{10}$

$\frac{8}{10}$

70) 2.50____2.5

71) 0.52 > 0.50

72) 0.01____0.02

73) 4.25 > 4.2

74) 0.4____0.32

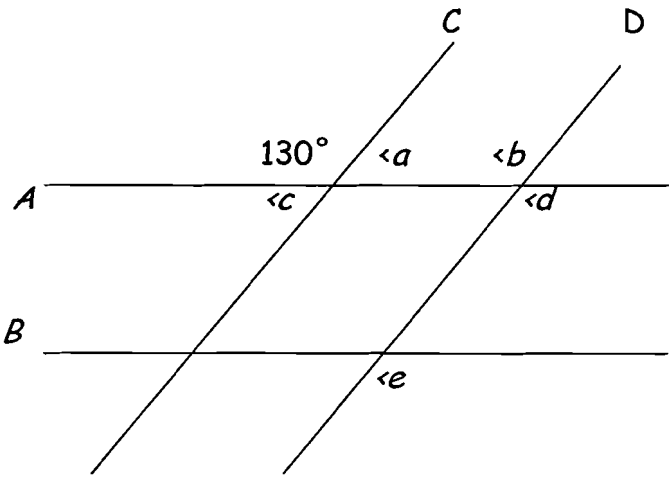
75) 0.09 < 0.1

76) 7.25____7.205

Supplementary Angles

Remember, supplementary angles add up to 180°.

Lines *A* and *B* are parallel, and lines *C* and *D* are parallel. Find angles *a, b, c, d* and e.

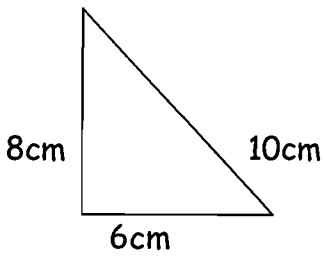


77) < a = 50° 78) < b = _____ 79) < c= 50° 80) < d= _____ 81) < e= 130°

Area and Perimeter

Find the area and perimeter of the following polygons. Use the reference sheet if needed.

82-83)

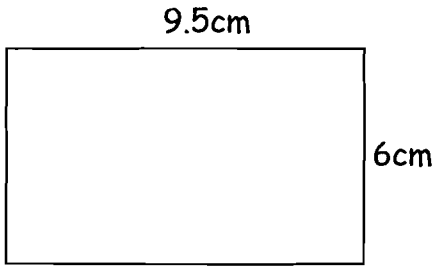


Area = _____

Perimeter= 24 cm

$P = 8 + 6 + 10 = 24$ cm

84-85)



Area= _____

Perimeter= 31 cm

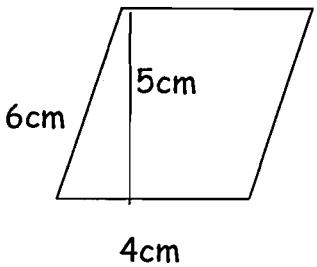
$P = 2(l + w)$

$P = 2(9.5 + 6)$

$P = 2(15.5)$

$P = 31$ cm

86-87)



Area= _____

Perimeter= 20 cm

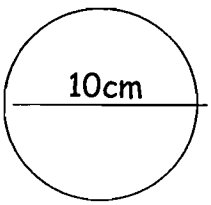
$P = 2(l + w)$

$P = 2(6 + 4)$

$P = 2(10)$

$P = 20$ cm

88-89)



Area= _____ (use 3.14 for π)

Circumference= 31.4 cm

$C = 2\pi r$

$C = 2(3.14) \cdot 5$

$C = 6.28 \cdot 5$

$C = 31.40$ cm

Percentage

Remember; turn your percentages into decimals before multiplying.

Example a) What is 20% of 100?
think...20% of 100 is __?__
so...0.20 x 100 = __20__

Hint: It is possible to have a percent greater than 100!

Example b) 12 is what % of 60?
think...What % is 12 of 60?
Place the part (12) over the whole (60) and reduce. so...12/60 = 1/5 = 0.20
Change the fraction or decimal to a percent.
1/5 or 0.20 = 20%

Find the following percentages:

90) What is 25% of 200? _____

91) What is 15% of 80? __12__

80
x.15
400
800
12.00

92) 25 is what% of 100? _____

93) What is 4% of 50? __2__

50
x.04
2.00

94) 30 is what% of 120? _____

95) What is 1% of 30? __.3__

30
x.01
.30

96) What is 80% of $12.00? _____

97) 15 is what% of 10? __150%__

$\frac{15}{10} = \frac{3}{2} = 1\frac{1}{2}$ or $1.5 =$ 150%

98) 1 is what% of 1000? _____

99) 3% of 15 is what? __.45__

15
x.03
.45

100) 60 is what% of 10000? _____