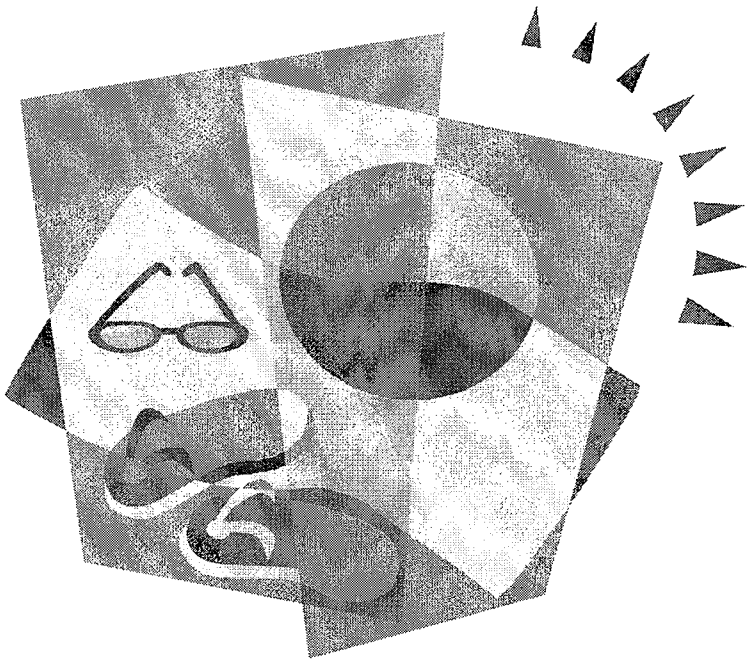


Summer Math Packet

Seventh Grade

Name: _____

Packet Due: September 11, 2009

Directions:

- Complete each problem.
- Show all work neatly in the actual packet.
  (Additional lined paper may be added if necessary.)
- Box your final answers.
- Round to the nearest hundredths (unless the directions specify something different).
- Label answers when necessary.
- Do NOT use a calculator.
- A NJ ASK reference sheet has been provided to assist with some information. *NOTE: This has been included for the Seventh and Eighth Grade packets only. The reference sheet does not include information that would be helpful in solving the problems in the sixth grade packet.*
- If you are stuck on a particular problem, use the answer key (odd-problems only) posted on the district website for a hint (www.medford.k12.nj.us). Or check out some of the math websites posted below. Parents or classmates may also be able to help. If you are still having difficulty, circle the problem number and be prepared to ask questions in class in September.
- This packet will be graded.

HELPFUL WEBSITES:

http://www.aplusmath.com

http://amathsdictionaryforkids.com

http://funbrain.com

http://math.com

http://mathtv.com

Not sure how to start? Look at the suggested pacing calendar on the back!

June 2009

Grade 6 into 7

Sun	Mon	Tue	Wed	Thu	Fri	Sat
21	22	23	24	25	26	27
28	29 # 1-3	30 # 4-6				

July 2009

Sun	Mon	Tue	Wed	Thu	Fri	Sat
			1 # 7-9	2 # 10-12	3 Independence Day Observed	4
5	6 # 13-15	7 # 16-18	8 # 19-21	9 # 22-24	10 # 25-26	11
12	13 # 27-28	14 # 29-30	15 # 31-33	16 # 34-35	17 # 36-37	18
19	20 # 38-40	21 # 41-43	22 # 44-46	23 # 47-49	24 # 50-52	25
26	27 # 53-55	28 # 56-57	29 # 58-59	30 # 60-61	31 # 62-64	

August 2008

Sun	Mon	Tue	Wed	Thu	Fri	Sat
						1
2	3 # 65-67	4 # 68-70	5 # 71-73	6 # 74-76	7 # 77-79	8
9	10 # 80-81	11 # 82-83	12 # 84-85	13 # 86-87	14 # 88-89	15
16	17 # 90-92	18 # 93-95	19 # 96-98	20 # 99-100	21 Reflection	22
23	24	25	26	27	28	29
30	31					

New Jersey Assessment of Skills and Knowledge
2009 Grade 7
MATHEMATICS REFERENCE SHEET

Use the information below to answer questions on the Mathematics section of the 2009 Grade Seven Assessment of Skills and Knowledge (NJ ASK 7).

The sum of the measures of the interior angles of a triangle = 180°

Distance = rate × time

Simple Interest Formula: $A = p + prt$ Compound Interest Formula: $A = p(1+r)^t$

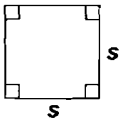
A = amount after t years; p = principal; r = annual interest rate; t = number of years

$\pi \approx 3.14$ or $\frac{22}{7}$

Square

Area = s^2

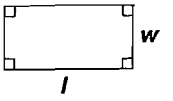
Perimeter = $4s$



Rectangle

Area = lw

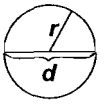
Perimeter = $2l + 2w$



Circle

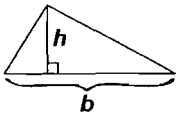
Area = πr^2

Circumference = $2\pi r$
$= \pi d$



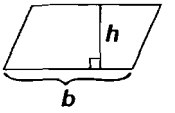
Triangle

Area = $\frac{1}{2}bh$



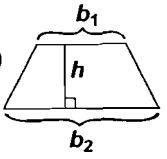
Parallelogram

Area = bh



Trapezoid

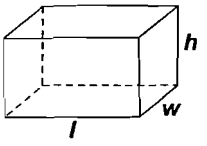
Area = $\frac{1}{2}h(b_1 + b_2)$



Rectangular Prism

Volume= lwh

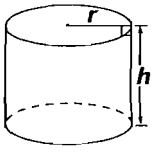
Surface Area=
$2lw + 2wh + 2lh$



Cylinder

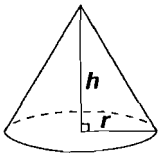
Volume = $\pi r^2 h$

Surface Area =
$2\pi rh + 2\pi r^2$



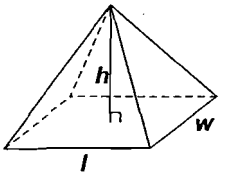
Cone

Volume = $\frac{1}{3}\pi r^2 h$



Pyramid

Volume = $\frac{1}{3}lwh$



USE THE FOLLOWING EQUIVALENTS FOR YOUR CALCULATIONS

60 seconds = 1 minute 60 minutes = 1 hour 24 hours = 1 day 7 days = 1 week 12 months = 1 year 365 days = 1 year	12 inches = 1 foot 3 feet = 1 yard 36 inches = 1 yard 5,280 feet = 1 mile 1,760 yards = 1 mile	10 millimeters = 1 centimeter 100 centimeters = 1 meter 10 decimeters = 1 meter 1000 meters = 1 kilometer
8 fluid ounces = 1 cup 2 cups = 1 pint 2 pints = 1 quart 4 quarts = 1 gallon 1000 milliliters (mL) = 1 liter (L)	16 ounces = 1 pound 2,000 pounds = 1 ton 1000 milligrams = 1 gram 100 centigrams = 1 gram 10 grams = 1 dekagram 1000 grams = 1 kilogram	

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Summer Packet - 6th into 7th grade Name_____

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) $\frac{11}{12}+\frac{9}{12}=$ ____

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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)	20)	25%
$\frac{1}{2}$	21)	22)
23)	0.6	24)
25)	26)	90%
$\frac{5}{8}$	27)	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) $\frac{2}{3}, \frac{1}{6}, \frac{3}{4}, \frac{1}{8}, \frac{2}{5}$

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

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

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**

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 = _____

36) Mode = _____

37) Range = _____

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= _____ 40) 74.3+6.65+2.008= _____

41) 53.97-4.24= _____ 42) 0.56-0.37= _____ 43) 89.2-7.53= _____

44) 11.825-9= _____ 45) 7.02+6.29-8= _____ 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= _____

48) 14.2x9.7= _____

49) 0.84x3.15= _____

50) 5.98x1.5= _____

51) 8.75x0.24= _____

52) 3.8x14.2= _____

53) 0.007x9= _____

54) 3.6x2.09= _____

55) 14x0.376=_____

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= _____

58) 15.12 ÷ 9= _____

59) 0.72 ÷ 0.06= _____

60) 35.31 ÷ 0.55= _____

61) 12.24 ÷ 0.12= _____

62) 7.45 ÷ 0.5= _____

63) 23.7 ÷ 0.08= _____

64) 0.679 ÷ 0.2= _____

Comparing Fractions and Decimals

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

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

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

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

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

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

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

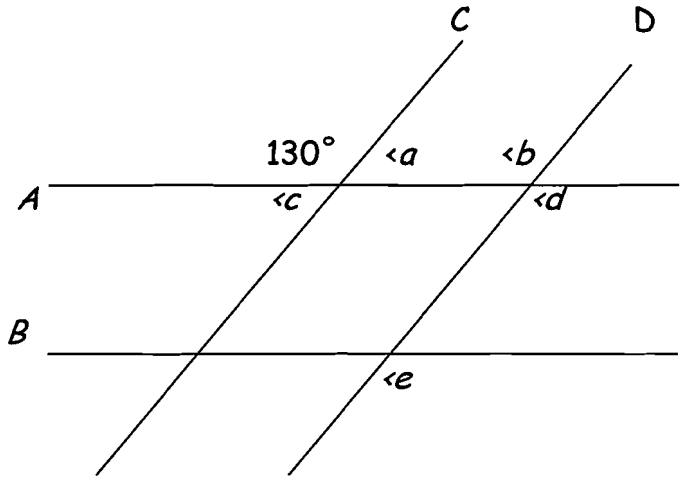
75) 0.09____0.1

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.

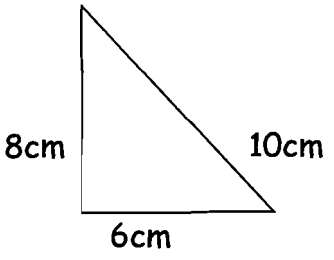


77) < a =_____ 78) < b =_____ 79) < c=_____ 80) < d=_____ 81) < e=_____

Area and Perimeter

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

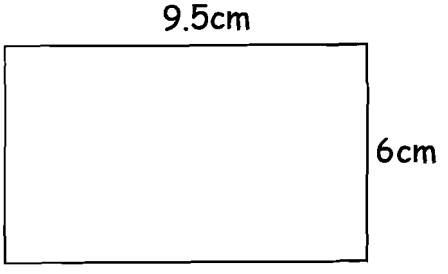
82-83)



Area = _____

Perimeter= _____

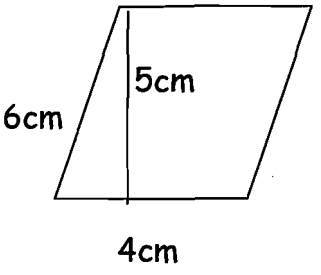
84-85)



Area=_____

Perimeter=_____

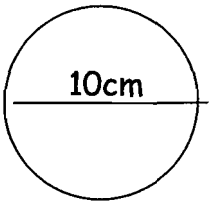
86-87)



Area= _____

Perimeter=_____

88-89)



Area=_____(use 3.14 for ∏)

Circumference=_____

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?_____

92) 25 is what% of 100? _____

93) What is 4% of 50? _____

94) 30 is what% of 120? _____

95) What is 1% of 30? _____

96) What is 80% of $12.00? _____

97) 15 is what% of 10? _____

98) 1 is what% of 1000? _____

99) 3% of 15 is what? _____

100) 60 is what% of 10000? _____

NAME _____ *Student Self-Assessment*

Summer Packet Reflection:

Rate yourself on the scale from one to four for each of the following statements:

Absolutely!	Sort of	Not Really	No
1	2	3	4

_____ 1. I followed the directions on the front of the packet.

_____ 2. I gave my best effort in completing the problems.

_____ 3. If I didn't understand a problem, I have a question ready to ask in class.

_____ 4. I was able to complete the packet independently.

_____ 5. I paced myself in completing the packet instead of cramming it all over the Labor Day weekend.

_____ 6. I think this packet helped me remember some of the things I've learned in math.

7. List two skills from the packet that you feel you have completely mastered.

---

8. List two skills in which you would like more practice.

---

9. Comments (optional):

_____

_____

_____

_____