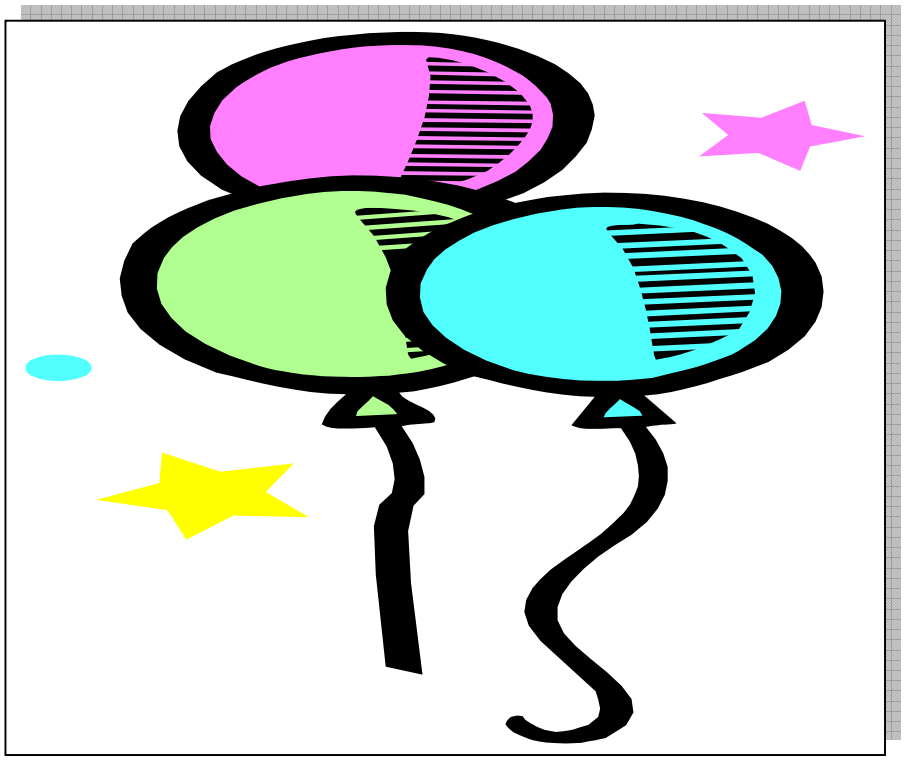
Cranford Public Schools

Soaring into Summer with Math!



For Students Entering Grade 7

This summer math booklet was developed to provide students entering grade seven an opportunity to review grade level math concepts and to improve math performance.

Sail into Summer with Math!

One goal of the Cranford Public Schools is to promote increased math performance at the middle school grade levels. Completing the summer math booklet allows each student, and parent to work together to achieve this goal. Students who complete the summer math booklet will be able to:

- Increase retention of math concepts,
- Improve and raise the level of math performance,
- Work toward closing the gap in student performance,
- Apply math concepts to performance tasks.

Student Responsibilities

Students will be able to improve their own math performance by:

- Completing the summer math booklet
- Reviewing math skills throughout the summer, and
- Returning the math booklet to next year's math teacher.

Student Signature	Grade	Date

Parent Responsibilities

Parents will be able to promote student success in math by:

- Supporting the math goal of the cluster of schools,
- Monitoring student completion of the summer math booklet,
- Encouraging student use of math concepts in summer activities.

Parent Signature	Date

Grade 7 Summer Mathematics Packet

Table of Contents

* (Enrichment)….. Problems are not required, but please give them a try!

Write Numbers in Words and Digits

Hints/Guide:

In order to read numbers correctly, we need to know the order of each place value. The order is the following:

1,000,000 is one million	100,000 is one hundred thousand
10,000 is ten thousand	1,000 is one thousand
100 is one hundred	10 is ten
1 is one	0.1 is one tenth
0.01 is one hundredth	0.001 is one thousandth

So, the number 354.67 is read as three hundred fifty four and sixty-seven hundredths and 3,500,607.004 is read as three million, five hundred thousand, six hundred seven and four thousandths. Please remember that the word "and" indicates and location of the decimal point in mathematics and should not be used anywhere else (for example, it is inappropriate to read 350 as three hundred and fifty, because "and" means a decimal point). Also, the term "point" in mathematics is a geometry term and should not be used in naming numbers (for example, 3.5 is not three "point" five, but rather three and five tenths).

Exercises:

Write the number name:

1. 560.08 _____
2. 7.016 _____
3. 24.47 _____
4. 6,003 _____
5. 3,005,600.07 _____

Write the number the name represents:

6. Forty-five thousandths _____
7. Seventeen and seven hundredths _____
8. Five million, three hundred thousand, twenty-nine and six tenths _____
9. Six million and five thousandths _____
10. Two hundred eight thousand, four _____

Rename Fractions, Percents, and Decimals

Hints/Guide:

To convert between fractions and percents, we must first convert fractions into decimals: We start with the fraction, such as $\frac{3}{5}$, and divide the numerator (the top number of a fraction) by the denominator (the bottom number of a fraction). So:

$$\begin{array}{r} 6 \\ 5 \mid 3.0 \\ -\ 30 \\ \hline 0 \end{array}$$ $\frac{3}{5}$ is equivalent to 0.6 OR $$\begin{array}{r} 0.22\ldots \\ 9 \mid 2.00 \end{array}$$ $\frac{2}{9}$ is equivalent to $0.\overline{2}$

To convert a decimal to a percent, we multiply the decimal by 100 (percent means a ratio of a number compared to 100). A short-cut is sometimes used of moving the decimal point two places to the right (which is equivalent to multiplying a decimal by 100, so

$$0.6 \times 100 = 60 \text{ and } \quad \frac{3}{5} = 0.6 = 60\%$$

To convert a percent to a decimal, we divide the percent by 100,

$$60\% \div 100 = 0.6 \quad \text{so} \quad 60\% = 0.6$$

Exercises: No Calculators!

Rename each fraction as a decimal:

1. $\frac{1}{5} =$
2. $\frac{3}{4} =$
3. $\frac{1}{2} =$
4. $\frac{1}{3} =$
5. $\frac{8}{10} =$
6. $\frac{2}{3} =$

Rename each fraction as a percent:

7. $\frac{1}{5} =$
8. $\frac{3}{4} =$
9. $\frac{1}{2} =$
10. $\frac{1}{3} =$
11. $\frac{8}{10} =$
12. $\frac{2}{3} =$

Rename each percent as a decimal:

13. 8% =
14. 60% =
15. 11% =
16. 12% =
17. 40% =
18. 95% =

Order Decimals

Hints/Guide:

To compare decimals and list them from least to greatest, it is easier to compare decimals that are the same place value, so one process we can use to compare decimals is to include trailing zeros to make all of the decimals that same place value. For example, to put the following in order from least to greatest:

.3, 1.61, .006, .107 is easier to compare as:

0.300, 1.610, 0.006, 0.107

to achieve 0.006, 0.107, 0.300, 1.610

and then return to the original form: 0.006, 0.107, 0.3, 1.61

Exercises:

List each group of numbers in order from least to greatest:

1. 20, 4, .6, .08

_____

2. 246.8, 248.6, 244.9, 246.5

_____

3. 1.03, 2.4, .89, .987

_____

4. 14.8, 2.68, .879, 8.47

_____

5. 5.3, 5.12, 5.38, 5.29

_____

6. 54.89, 56.3, 58.1, 52.98

_____

7. 4, .006, .8, .07

_____

8. 297, 3.456, 64.4, 7.24

_____

9. 794, 793.8, 794.65, 794.7

_____

10. 9, 6.7, 7.24, 14

_____

11. 4.2, 4.19, 4.07, 4.3

_____

12. 3.75, 6.7, 3.8, .45

_____

Add Mixed Numbers

Hints/Guide:

When adding mixed numbers, we add the whole numbers and the fractions separately, then simplify the answer. For example:

$$\begin{array}{r} 4\frac{1}{3} = 4\frac{8}{24} \\ +\,2\frac{6}{8} = 2\frac{18}{24} \\ \hline 6\frac{26}{24} = 6 + 1\frac{2}{24} = 7\frac{2}{24} = 7\frac{1}{12} \end{array}$$

First, we convert the fractions to have the same denominator, then add the fractions and add the whole numbers. If needed, we then simplify the answer.

Exercises: Solve in lowest terms: No Calculators!

SHOW ALL WORK. Use a separate sheet of paper (if necessary) and staple to this page.

1. $\begin{array}{r} 2\frac{1}{4} \\ +\,8\frac{1}{2} \\ \hline \end{array}$

2. $\begin{array}{r} 3\frac{8}{15} \\ +\,7\frac{1}{3} \\ \hline \end{array}$

3. $\begin{array}{r} 3\frac{3}{5} \\ +\,5\frac{1}{2} \\ \hline \end{array}$

4. $\begin{array}{r} 5\frac{3}{8} \\ +\,4\frac{1}{4} \\ \hline \end{array}$

5. $\begin{array}{r} 7\frac{3}{7} \\ +\,6\frac{1}{2} \\ \hline \end{array}$

6. $\begin{array}{r} 5\frac{5}{9} \\ +\,1\frac{1}{3} \\ \hline \end{array}$

7. $\begin{array}{r} 4\frac{1}{3} \\ +\,6\frac{1}{4} \\ \hline \end{array}$

8. $\begin{array}{r} 1\frac{2}{3} \\ +\,6\frac{1}{4} \\ \hline \end{array}$

9. $\begin{array}{r} 1\frac{2}{9} \\ +\,5\frac{2}{3} \\ \hline \end{array}$

Subtract Mixed Numbers

Hints/Guide:

When subtracting mixed numbers, we subtract the whole numbers and the fractions separately, then simplify the answer. For example:

$$\begin{array}{r} 7\frac{3}{4} = 7\frac{18}{24} \\ -\,2\frac{15}{24} = 2\frac{15}{24} \\ \hline 5\frac{3}{24} = 5\frac{1}{8} \end{array}$$

First, we convert the fractions to have the same denominator, then subtract the fractions and subtract the whole numbers. If needed, we then simplify the answer.

Exercises: Solve in lowest terms: No Calculators!

SHOW ALL WORK. Use a separate sheet of paper (if necessary) and staple to this page.

1. $\begin{array}{r} 4\frac{1}{3} \\ -\,2\frac{1}{4} \\ \hline \end{array}$

2. $\begin{array}{r} 6\frac{3}{4} \\ -\,\frac{2}{3} \\ \hline \end{array}$

3. $\begin{array}{r} 9\frac{2}{3} \\ -\,6\frac{1}{4} \\ \hline \end{array}$

4. $\begin{array}{r} 6\frac{3}{4} \\ -\,5\frac{1}{5} \\ \hline \end{array}$

5. $\begin{array}{r} 7\frac{1}{2} \\ -\,3\frac{1}{4} \\ \hline \end{array}$

6. $\begin{array}{r} 3\frac{1}{2} \\ -\,2\frac{3}{10} \\ \hline \end{array}$

7. $\begin{array}{r} 9\frac{7}{10} \\ -\,4\frac{1}{2} \\ \hline \end{array}$

8. $\begin{array}{r} 8\frac{5}{6} \\ -\,5\frac{1}{3} \\ \hline \end{array}$

9. $\begin{array}{r} 6\frac{3}{4} \\ -\,6\frac{5}{8} \\ \hline \end{array}$

Multiply Fractions and Solve Proportions

Hints/Guide:

To solve problems involving multiplying fractions and whole numbers, we must first place a one under the whole number, then multiply the numerators together and the denominators together. Then we simplify the answer:

$$\frac{6}{7} \bullet 4 = \frac{6}{7} \bullet \frac{4}{1} = \frac{24}{7} = 3\frac{3}{7}$$

To solve proportions, one method is to determine the multiplying factor of the two equal ratios. For example:

$\frac{4}{9} = \frac{24}{x}$ since 4 is multiplied by 6 to get 24, we multiply 9 by 6, so $\frac{4}{9} = \frac{24}{54}$.

Since the numerator of the fraction on the right must be multiplied by 6 to get the numerator on the left, then we must multiply the denominator of 9 by 6 to get the missing denominator, which must be 54.

Exercises: Solve (For problems 8 - 15, solve for N): No Calculators!

SHOW ALL WORK. Use a separate sheet of paper (if necessary) and staple to this page.

1. $4 \bullet \frac{3}{4} =$
2. $\frac{1}{5} \bullet 7 =$
3. $8 \bullet \frac{1}{5} =$
4. $6 \bullet \frac{3}{7} =$
5. $\frac{4}{5} \bullet 4 =$
6. $\frac{2}{3} \bullet 6 =$
7. $7 \bullet \frac{1}{4} =$
8. $\frac{1}{5} = \frac{n}{20}$
9. $\frac{3}{n} = \frac{12}{28}$
10. $\frac{1}{n} = \frac{5}{25}$
11. $\frac{n}{4} = \frac{3}{12}$
12. $\frac{3}{7} = \frac{12}{n}$
13. $\frac{n}{9} = \frac{12}{27}$
14. $\frac{2}{3} = \frac{18}{n}$
15. $\frac{2}{7} = \frac{n}{21}$

Add and Subtract Decimals

Hints/Guide:

When adding and subtracting decimals, the key is to line up the decimals above each other, add zeros to have all of the numbers have the same place value length, then use the same rules as adding and subtracting whole numbers, with the answer having a decimal point in line with the problem. For example:

$$\begin{array}{rrr} & 34.5 & 34.500 \\ 34.5 + 6.72 + 9.045 = & 6.72 & = \ 6.720 \\ & \underline{+\ 9.045} & \underline{+\ 9.045} \\ & & 50.265 \end{array}$$

AND

$$\begin{array}{rr} 5 - 3.25 = & 5.00 \\ & \underline{-\ 3.25} \\ & 1.75 \end{array}$$

Exercises: Solve: No Calculators!

SHOW ALL WORK. Use a separate sheet of paper (if necessary) and staple to this page.

1. 15.7 + 2.34 + 5.06 =

2. 64.038 + 164.8 + 15.7 =

3. 2.6 + 64.89 + 4.007 =

4. 12.9 + 2.008 + 75.9 =

5. $\begin{array}{r} 543.8 \\ 27.64 \\ \underline{+\ 6.9} \end{array}$

6. 2.6 + 4.75 =

7. 43.31 + 7.406 =

8. $\begin{array}{r} 64.9 \\ 343.6 \\ \underline{+\ 6.007} \end{array}$

9. 6.45 + 54.9 =

10. 3.8 + .76 + .008 =

11. 87.4 - 56.09 =

12. 5.908 - 4.72 =

13. 68.9 - 24.74 =

14. 955.3 - 242.7 =

15. $\begin{array}{r} 695.42 \\ \underline{-\ 44.79} \end{array}$

16. 432.97 - 287.32 =

17. 43.905 - 9.08 =

18. $\begin{array}{r} 78.9 \\ \underline{-\ 54.7} \end{array}$

19. 200 - 14.96 =

20. 15 - 2.43 =

Multiply and Divide Decimals

Hints/Guide:

To multiply decimals, the rules are the same as with multiplying whole numbers, until the product is determined and the decimal point must be located. The decimal point is placed the same number of digits in from the right of the product as the number of decimal place values in the numbers being multiplied. For example:

8.54 x 17.2, since 854 x 172 = 146888, then we count the number of decimal places in the numbers being multiplied, which is three, so the final product is 146.888 (the decimal point comes three places in from the right).

To divide decimals by a whole number, the process of division is the same, but the decimal point is brought straight up from the dividend into the quotient. For example:

$3\overline{)\,51.06}$ $\quad 17.02$ The decimal point moves straight up from the dividend to the quotient.

Exercises: Solve: No Calculators!

SHOW ALL WORK. Use a separate sheet of paper (if necessary) and staple to this page.

1. 63 x .14	2. .87 x 2.3	3. 8.94 x 2.1	4. 4.2 x .62
5. 34.5 x 4.7	6. 32.1 x .45	7. 91.4 x 47	8. 3.9 x 11

9. $35\overline{)70.35}$ 10. $7\overline{)25.83}$ 11. $14\overline{)45.584}$

Find Percent of a Number

Hints/Guide:

To determine the percent of a number, we must first convert the percent into a decimal by dividing by 100 (which can be short-cut as moving the decimal point in the percentage two places to the left), then multiplying the decimal by the number. For example:

45% of 240 = 45% x 240 = 0.45 x 240 = 108

Exercises: Solve for n: No Calculators!

SHOW ALL WORK. Use a separate sheet of paper (if necessary) and staple to this page.

1. 30% of 450 = n
2. 7% of 42 = n
3. 10% of 321 = n
4. 15% of 54 = n
5. 65% of 320 = n
6. 80% of 64 = n
7. 9% of 568 = n
8. 15% of 38 = n
9. 25% of 348 = n
10. 85% of 488 = n
11. 90% of 750 = n
12. 6% of 42 = n
13. 60% of 78 = n
14. 4% of 480 = n
15. 10% of 435 = n
16. 24% of 54 = n

Reading Scales and Finding Area and Perimeter

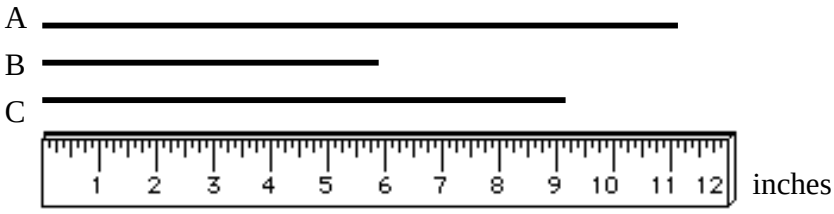
Hints/Guide:

To determine the correct answer when reading scales, the important thing to remember is to determine the increments (the amount of each mark) of the given scale.

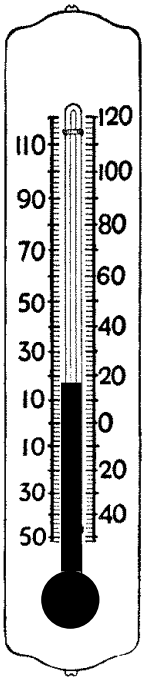
To find the perimeter of a rectangle or square, we must add the lengths of all of the sides together. To find the area of a square or a rectangle, we must multiply the length by the width.

Exercises:

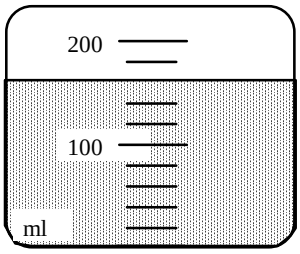
1. Find the length of each line to the nearest inch:



2. Find the temperature in Celsius

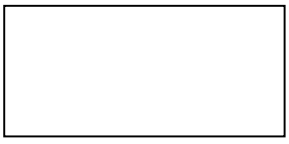


3. Determine the amount of liquid in ml.

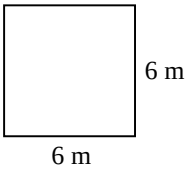


4. Find each area and perimeter:

a.



b.



c.

Choose an Appropriate Unit of Measure

Hints/Guide:

The important part of this lesson is knowing how different units of measure relate to each other as well as the ability to compare known units of measure to new items. Some items and their measurement to use for the exercises:

Area of a sheet of notebook paper is about 93 square inches in standard units and about 550 square centimeters in metric units, so we would say that notebook paper is measured in square inches or square centimeters.

The length of a pencil is about 7 inches in standard units or about 17 centimeters in metric units, so pencil length would be measured in inches or centimeters.

For reference:
1 square foot is equal to about 0.1 square meters
1 mile is about 1.6 kilometers
100 pounds is about 0.45 kilograms
1 quart is about 0.95 liters

Exercises: Select the most appropriate unit to measure these items:

Example:	Standard	Metric
1. Volume of a gasoline can		
2. Area of a postage stamp		
3. Length of a bedroom wall		
4. Capacity of a can of soda		
5. Height of an door		
6. Volume of a cereal box		
7. Length of a sneaker		
8. Volume of an oven		
9. Weight of a dog		
10. Area of a textbook cover		
11. Weight of an apple		

Find Elapsed Time

Hints/Guide:

The key to understanding time problems is to think about time revolving around on a clock. If a problem starts in the morning (a.m.) and ends in the afternoon (p.m.), count the amount of time it takes to get to 12 noon, then count the amount of time it takes until the end. For example:

Joanne is cooking a large turkey and puts it in the oven at 10:15 in the morning. Dinner is planned for 4:30 in the evening and this is when Joanne will take the turkey out of the oven. How long will the turkey cook?

From 10:15 to 12:00 noon is 1 hour 45 minutes. From 12:00 noon to 4:30 p.m. is 4 hours 30 minutes. To add the times together:

$$\begin{array}{rr} & 1\text{ h }45\text{ m} \\ + & 4\text{ h }30\text{ m} \\ \hline & 5\text{ h }75\text{ m} = 5\text{ h} + 1\text{ h }15\text{ m} = 6\text{ h }15\text{ m} \end{array}$$

The turkey will cook for 6 hours and 15 minutes.

Exercises:

1. The school day begins at 7:55 a.m. and ends at 2:40 p.m. How long are you in school?

2. If you go to sleep at 9:30 p.m. and wake up at 6:30 a.m. the next morning, how long did you sleep?

3. If you want to cook a chicken that takes 4 hours and 30 minutes to completely cook and you are planning dinner for 6:00 p.m., what time do you need to start cooking the chicken?

4. If you ride your bike for 2 hours and 45 minutes and you started riding at 11:30 a.m., at what time will you finish your riding?

5. If you go to a basketball game at the MCI Center to see the Washington Wizards, and the game begins at 7:05 p.m. and ends at 11:00 p.m., how long was the game?

Use Information from Tables and Graphs

Hints/Guide:

To use information from tables and graphs, we must locate the information in the correct section of the table or graph, then be sure that we are answering the correct question.

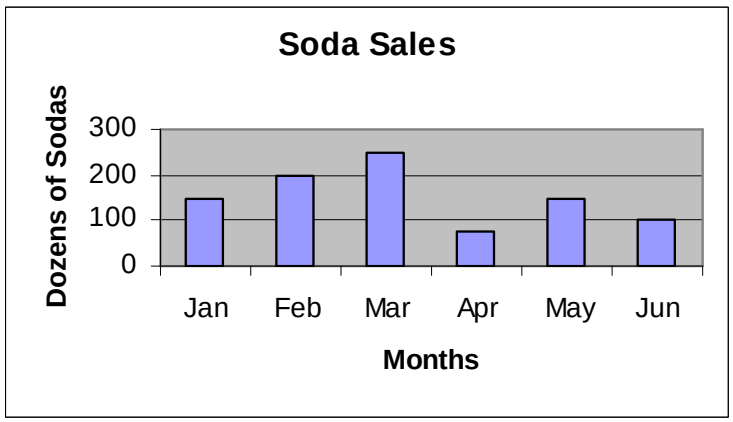
Exercises:

Approximate Distance in Kilometers				
City	Annapolis	Baltimore	Richmond	New York
Annapolis	-	40	175	300
Baltimore	40	-	210	280
Richmond	175	210	-	460
New York	300	280	460	-

1. What is the distance from New York to Annapolis?

2. Which is greater: the distance from New York to Baltimore or the distance from Richmond to Annapolis?

3. Which two cities on the chart are the farthest apart?



4. What is the difference in sales between March and April?

5. Which two months appear to have identical sales?

Find the Average of a Set of Numbers

Hints/Guide:

To find the average of a set of numbers, we add together all of the numbers and then divide by how many numbers are in the data set. For example:

If the tests scores are 73, 87, 94, 84, 92, and 95, then we add the scores together: 73 + 87 + 94 + 84 + 92 + 95 = 525, and since there are 6 numbers in the data set, we divide 527 by 6 and get the quotient of 87.5.

Exercises: No Calculators!

SHOW ALL WORK. Use a separate sheet of paper (if necessary) and staple to this page.

For problem 1, use the following chart

Week	Monday	Tuesday	Wednesday	Thursday	Friday
1	65	68	72	74	68
2	68	75	80	68	75
3	75	74	69	79	80
4	80	82	76	67	79

1. Find the average (mean) temperature for:

   Monday _____ Tuesday _____ Wednesday _____

   Thursday _____ Friday _____

2. If George has test scores of 85, 88, 92, and 87, what is his average (mean) score?

   Challenge: Using the same test scores for George, what would his fifth test score need to be to have an average (mean) grade of 90?

3. If Tina's bowling scores were 120, 155, 145, 162, and 138, what was her average (mean) score?

   Challenge: What would Tina's score need to be in the sixth game if she wanted an average over those six games of 145?

Use Simple Formulas and Choose Reasonable Answers

Hints/Guide:

When using formulas, the key is to substitute the values into the given equation correctly. We need to be sure that numbers are substituted correctly and that the order of operations is correctly followed.

When choosing a reasonable answer for a problem, we need to look at the numbers in the given problem and determine whether the given answer makes sense for the given situation.

Exercises: No Calculators!

SHOW ALL WORK. Use a separate sheet of paper (if necessary) and staple to this page.

1. Cab drivers base their fares partially on each ride and partially on the distance of the trip. The charge is as follows:

   c = 0.50 + 1.25 m, where c = the charge and m = number of miles traveled.

   What is the charge for a 5 mile trip and for a 12 mile trip?

   Is $45 a reasonable charge for a 20 mile trip?

2. Profit is determined by subtracting the cost of an item from the sale price of the item. This formula is

   p = s - c, where p = profit, s = the sale price, and c = the cost of the item.

   What is the profit of a winter coat that a store sells for $150.00 that cost the store $85.00?

   Is a $9,000 profit possible for a $16,000.00 car? How is it possible?

3. In order to determine the typing speed of someone applying for a job, a three minute test would be given and the speed of the applicant determined. The formula is:

   $S = \frac{w - e}{3}$, where S = typing speed, w = words typed, and e = the number of errors in the test.

   What is the typing speed of someone who types 167 words in three minutes with 12 errors?

   Is it possible for someone to type 1,000 words per minute? Justify your answer.

Solve Money Problems

Hints/Guide:

Solving money problems is merely applying the rules of decimals in a real life setting. When reading the problems, we need to determine whether we add (such as depositing money or determining a total bill), subtract (checks, withdrawals, and the difference in pricing), multiply (purchasing multiple quantities of an item), or divide (distributing money evenly, loan payments). Once we have determined which operation to use, we apply the rules for decimal operations and solve the problem and label our answer appropriately.

Exercises: No Calculators!

SHOW ALL WORK. Use a separate sheet of paper (if necessary) and staple to this page.

1. Frank works at Apartment Depot and earns $8.50 per hour. Last week, he worked 36 hours. What was his total pay?

2. Harry went to Rent-a-Center and rented a pneumatic nailer for $45.00, a power sander for $39.95, and a radial arm saw for $57.90. What was his total bill, excluding tax?

3. Joe is planning a trip to Houston and has calculated $450.95 for lodging, $98.00 for food, and $114.50 for gasoline. How much will his trip cost?

4. Susan has $350 in her checking account. She writes checks for $45.70 for flowers, $78.53 for books, and $46.98 for CD's. How much money is left in her checking account?

5. In order to pay off the car she bought, Lauri had to make 34 more payments of $145.98. How much does she still owe?

6. Jared earns $455.00 per week as manager of the Save-Mart. What will be his income over 12 weeks?

7. The Jennings family paid $371.40 for the year for their cable service. If their payments were the same each month, how much was their monthly bill?

Solve Problems using Percent

Hints/Guide:

When solving percent problems, we apply the rules for finding percent of a number in realistic situations. For example, to find the amount of sales tax on a $450.00 item if the tax rate is 5%, we find 5% of 450 (.05 x 450 = 22.5), and then label our answer in dollars, getting $22.50.

Exercises: No Calculators!

SHOW ALL WORK. Use a separate sheet of paper (if necessary) and staple to this page.

1. Susie has just bought a pair of jeans for $45.00, a sweater for $24.00, and a jacket for $85.00. The sales tax is 5%. What is her total bill?

2. Jack bought a set of golf clubs for $250.00 and received a rebate of 20%. How much was the rebate?

3. A construction manager calculates it will cost $2,890 for materials for her next project. She must add in 10% for scrap and extras. What will be the total cost?

4. The regular price for a video game system is $164.50 but is on sale for 30% off.
   What is the amount of the discount?
   What is the sale price?

5. Cindy earns a 15% commission on all sales. On Saturday, she sold $980 worth of merchandise. What was the amount of commission she earned on Saturday?

6. The band had a fundraiser and sold $25,000 worth of candy. They received 40% of this amount for themselves. How much did they receive?

Make Change

Exercises: No Calculators!

SHOW ALL WORK. Use a separate sheet of paper (if necessary) and staple to this page.

1. Kathy bought a soft pretzel and a diet coke for $2.37. If she handed the clerk a twenty dollar bill, how much change should she receive?

2. Linda bought groceries for a total of $29.35. If she handed the cashier two twenty dollar bills, how much change will she receive?

3. Jorge purchased a new pair of jeans for $43.28 and paid with a fifty dollar bill. How much change will he receive?

4. If you use a twenty dollar bill to purchase food totaling $15.67, how much change should you get?

5. Sherman bought a soda for $.95 and paid with a ten dollar bill, how much change should he receive?

6. Bob buys two shirts for a total of $34.63, including tax. How much change will he receive from two twenty dollar bills?

7. Notebooks at the school store cost 75¢ each. Pens cost 50¢ each. How many different combinations of notebooks and pens could Hermit buy for $5.00? Explain your reasoning

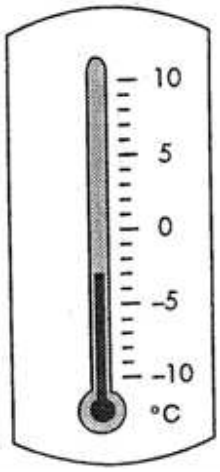
Mixed Problem Solving

1. The table below shows the low temperatures of four New Jersey Cities on one winter night. Order the temperature from coldest to warmest.

CITY	TEMPERATURE
Gloucester	3°F
New Brunswick	0°F
Elizabeth	-8°F
Paterson	-5°F

.

2. The thermometer shows that the temperature outside is - 3°C. What would the temperature be if it were
   - 7 degrees warmer?
   - 4 degrees colder?
   - 10 degrees warmer?



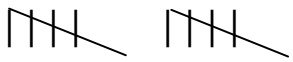
3. Jan brought eight 2-liter bottles of soda to the class party. At the end of the party, one bottle was ½ full, a second bottle contained 0.5 liters of soda, and a third bottle was 3/5 full. The other 5 bottles were empty. How much soda did the students drink during the class party?• Show one way to get the answer to this problem. Explain your method.• Show another way to get the answer to this problem. Explain your method.

4. Janis surveyed the students in her class and discovered that 2/3 of the class rides bicycles. There are 36 students in the class. How many of them ride bicycles?

5. Sixteen students decide to share the cost of a DVD rental for a party. The DVD rental is $5.76. How much will each of them have to pay?

6. A bag contains 5 red marbles, 8 blue marbles, and 7 green marbles. Arturo reaches into the bag and removes one marble. What is the probability that marble is red?

7. Kathy's brother put 8 marbles into a bag without showing Kathy the colors. She reaches into the bag without looking, pulls out a marble, records the color, and puts the marble back into the bag. She repeats this process several times. The chart below shows her results:

Color	Number of Times Picked
Blue	||||
Red	||
Yellow	

8. The following sundae "makings" were available:

Ice Cream Flavors	**Sauces**	**Toppings**
chocolate	chocolate	whipped cream
vanilla	strawberry	nuts
strawberry		sprinkles

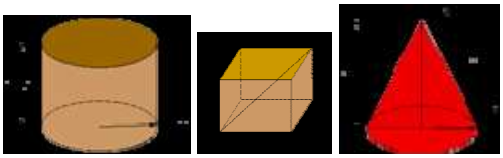
How many different sundaes could be made using one choice from each column, if you start with ice cream, then add sauce, and then add a topping?

9. At school, Jack spends $3.75 for lunch every day. About how many lunches can Jack buy with $12?

Mixed Problems

1. Here are three boxes that are used for cereal:

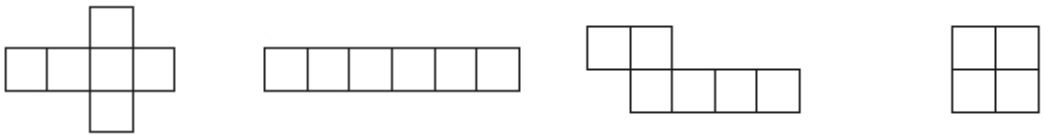
A B C



• How are boxes A and B alike?
• How is box C different from boxes A and B?
• How is box B different from boxes A and C?

2. A fountain is built in the shape of a circle. The fountain is 10 feet across at the widest part. What is the area of the floor of the fountain?

3. Which of the following nets forms a cube?



4. The area of the base of a box is 14 square inches. The box is 12 inches high. What is its volume?

5. Evaluate 3 + 2 x 4.

6. Describe an equation that would fit this pattern? 2, 6, 18, 54, . . .

7. Dorothy has $3.00 on September 1. Each week she earns $5.00. Write a number sentence shows how much money she will have in 10 weeks?

8. Kathy tells a friend that she can multiply 2-digit numbers in her head using the distributive property. She gives the following example to her friend. 18 x 12 = (18 x 10) + (18 x 2) = 180 + 36 = 216 Using Kathy's method, how could you multiply 32 x 15?

9. Maria wants to find the perimeter of a 10-foot by 13-foot room. She does this by performing the following computation: 2(10) + 2(13) If she performs her computation correctly, what will she get for the perimeter of the room in feet?

10. Evaluate: $\frac{3 + 4 (5 - 2)}{5 (3 + 1)}$

11. What is 6^3 written as repeated multiplication?

12. Write a rule for the table.

b	5	6	7
?	12	14	16

13. What is the solution to the equation $\frac{d}{4} = 6$

14. Evaluate $2y - 4$ for $y = 9$

15. Write the prime factorization for the following numbers:

100

64

189

Compare using < , > , or =.

16. $\frac{3}{9} \bigcirc \frac{4}{12}$

17. $\frac{2}{3} \bigcirc \frac{3}{4}$

18. 2.409 ◯ 2.5