## Calculate!

If you earned one dollar for every breath you took on your tenth birthday (one breath per second), how much money would you have?

(1.03)

## Thinking Mathematically

Write a story to illustrate this equation.

$$24 \div 4 = 6$$
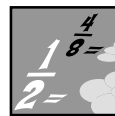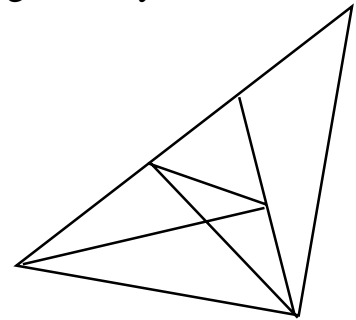
(5.02)

## Exploring Data

Brainstorm a list of North Carolina tourist attractions. Refine the list to ten. Survey ten people to determine favorite attractions from the list. Organize and display the data in an interesting and attractive manner.
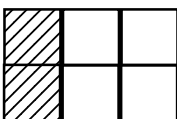
(4.01)

## Looking Out For Math
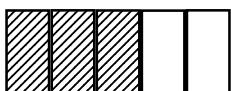
How many triangles can you find in this shape?



## Fraction Action

Divide each region to show an equivalent fraction for the shaded part.

Example:

$$\frac{1}{3} = \frac{2}{6}$$

a)

$$\frac{1}{4} = \underline{\phantom{xx}}$$

b)

$$\frac{3}{5} = \underline{\phantom{xx}}$$

c)

$$\frac{2}{3} = \underline{\phantom{xx}}$$
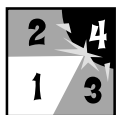
(1.03)

# Rockingham Remainders

**Number of Players:** 2-4
**Materials:** You need 1 number cube, 1 marker and 1 score sheet for each player
**Directions:**
1. Each player rolls the cube. Highest number goes first.
2. The first player places a marker on a number, then rolls the cube and divides the marked number by the cube number. The remainder is his or her score.
3. Each player follows step #2 in turn.
4. The winner is the first player to score at least 20 points.

| | | | | |
|---|---|---|---|---|
| 12 | 14 | 15 | 16 | 18 | 20 | 23 |
| 21 | 22 | 24 | 25 | 26 | 28 | 29 |
| 30 | 32 | 33 | 34 | 35 | 36 | 37 |
| 38 | 39 | 40 | 41 | 42 | 43 | 44 |

(1.02)

# Keeping Skills Sharp

1. $78{,}563 + 34{,}586 = $ Q

2. Find the difference between 3,786 and 13,904

3. R x 8 = 48          4.      15 x K = 300

5. $F \div 7 = 7$

6. True or False: A line segment is endless in both directions.

7. 7 feet = ___ inches.

8. How many thousands are in a million?

9. Marsha's soccer team scores four goals in each game. At the end of the season they had soared 32 goals. How many games did they play?

10. Mr. Case is taking his family of 2 adults and 3 children to the movies. A child's ticket is $4.00 and an adult's ticket is $6.00. How much will he spend?

# Solve this!

Trent, Bobby, Sara, and Jo played in a computer games tournament in pairs. The girls were never partners. The girls swapped partners for the second game. Use these clues to find out who played with whom in each game.

1. Bobby and his teammate won the first game.

2. Sara and her teammate lost the second game.

3. Trent was on a winning team in just one of his two games.

(1.05)

# To the Teacher

## Calculate!
Answer: 864,000

## Thinking Mathematically
Since this is a process of dividing, students may tend to show a multiplication problem.

## Exploring Data
You might have students work in groups and assign each group a different method of reporting the data.

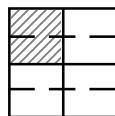## Looking Out For Math
15 triangles
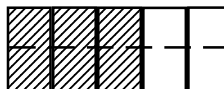
## Problem of the Week
Bobby and Sara

Trent and Jo

## Fraction Action

a)    1/4 = 2/8

b)    3/5 = 6/10

c)    2/3 = 4/6

Encourage students to notice changes in numerator and denominator when they record the equivalents.

## Mental Math
Directions to Students: Number your paper from 1 to 8. Write your answers as the questions are called out. Each question will be repeated only once.

1.  2 more than 3999
2.  4 x 2 x 3 - 5
3.  Nearest dollar: $3.10
4.  17 + 33
5.  9 x 8
6.  The value of 5 quarters and 3 dimes
7.  Which is longer -- 14 inches or 14 centimeters?
8.  1/2 of 40

## Keeping Skills Sharp
1.  113,149
2.  10,118
3.  6
4.  20
5.  49
6.  False
7.  84
8.  1,000
9.  8
10. $24

## Calculate!

Consumers use calculators to figure the best buys. Knowing what the numbers mean when you divide money is important. Record prices from a local store, divide, and explain the results (ex. 4 for $1.35 or 2 for $0.99)
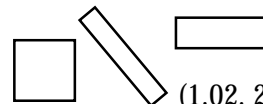
(1.02b)

## Looking Out For Math

How many different rectangles with an area of 36 square cm are there?

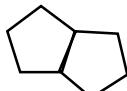Which has the smallest perimeter? the largest?

(1.02, 2.01, 2.02)

## Thinking Mathematically

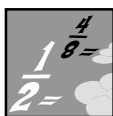perimeter = 5 units

perimeter = 8 units

perimeter = 11 units

What would be the perimeter of 10 pentagons connected in this way? _____
perimeter of 15 pentagons? _____
Is there a rule for any number of pentagons?

(5.02b)

## Fraction Action

A. Farmer Brown has enough barbed wire for five-eighths of a fence. What fractional part does she need to complete the whole fence?

_____

B. Charlie made an old fence stronger by making seven-twelfths of it with barbed wire. Four-twelfths of it was already barbed wire. What fractional part of the fence is barbed wire now?

_____

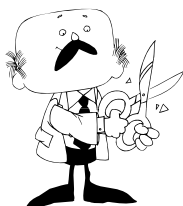C. Cowhand Bob put up one-fourth of a fence in the morning. By the end of the day, three-fourths of the fence was complete. What fractional part of the fence did he build that afternoon?

_____

(1.04a)

## Exploring Data

Cut out examples of graphs from the newspapers. What information is being shown? How would you classify these data displays?

Can you determine who was surveyed or where the data originated?

(4.01)
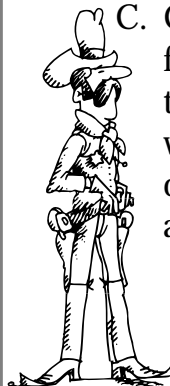
# APPLE NIM
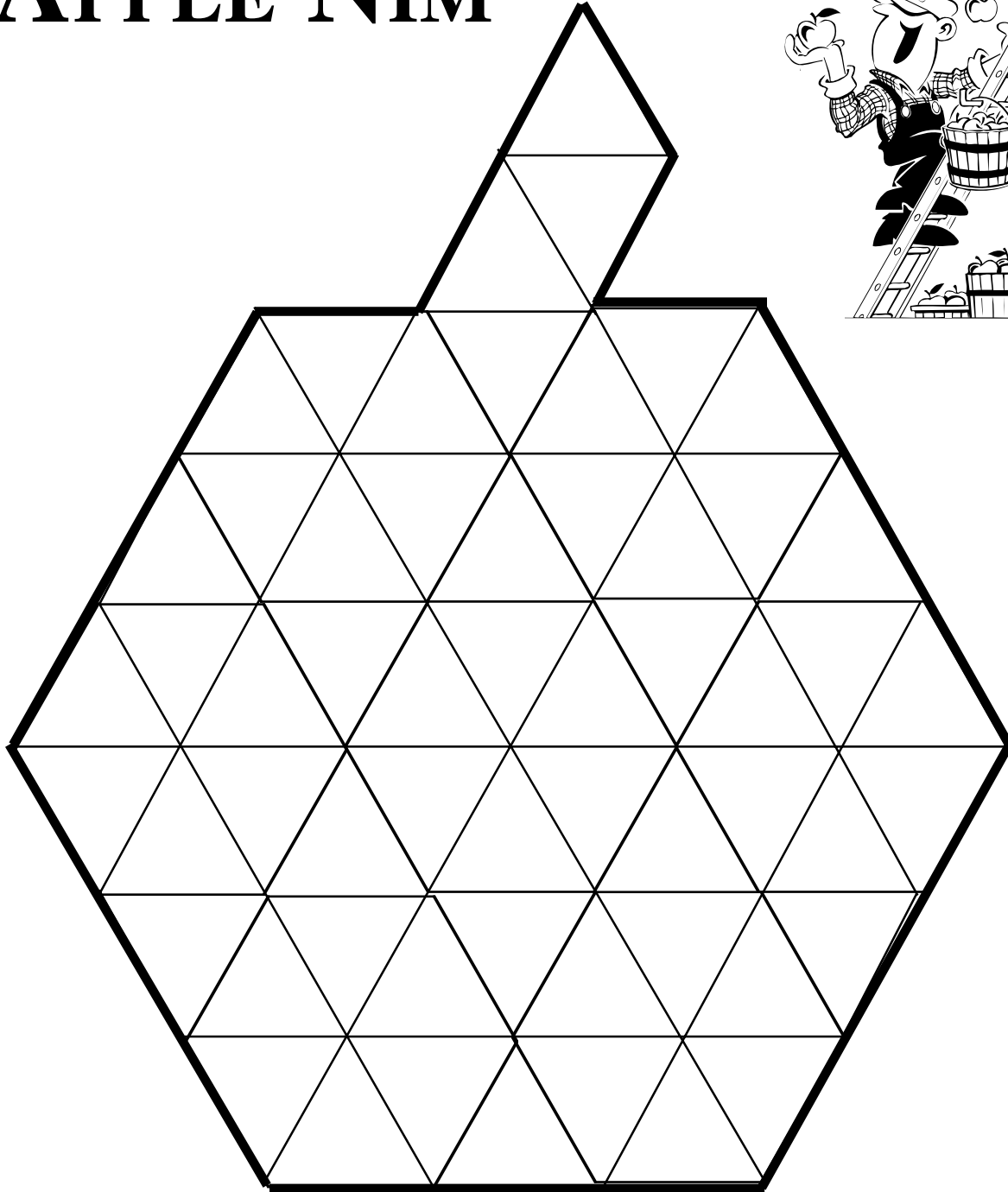


***Number of Players:*** Two

***Materials:*** Pattern Blocks: Hexagons, Triangles, Trapezoids, Blue Parallelograms.

***Directions:*** The object is to take turns placing one pattern piece at a time until the apple is covered. The person placing the last piece is the winner!

**Variation:** The person placing the last piece loses the game.

# Keeping Skills Sharp

1.  $456,895 + L = 456,934$      2.     $10,956 - A = 10,757$

3.  $56 \div B = 8$

4.  What is the product of 136 and 4

5.  $136 \div H = 68$      6.     $32^{o} F = \underline{\quad}^{o} C$

7.  Two $20 bills + six $1 bills + 3 quarters + 3 nickels =

8.  What is the value of the 8 in 489,752

9.  If March 12th is a Tuesday, then what day of the week is April 1st?

10. A cookie recipe calls for one and a half cups of oatmeal. Eddie has only a one-fourth cup measuring cup.  How many times will Eddie need to fill his cup?

# Solve this!

Cobb's General Store down the street was going out of business.  My father found lots of bargains.  He bought two pairs of jeans, six picture frames, three packs of film, and a whole sack full of cashew nuts.  My sister and I love cashew nuts and soon had eaten our fill.  We each ate one fourth of the total nuts in the sack, but there were still 80 nuts left.

How many nuts were originally in the sack?

(1.03)
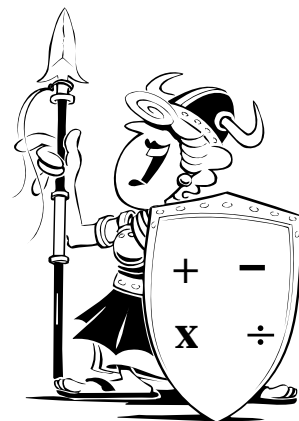
# To the Teacher

## Calculate!

Help students know how to deal with "messy" decimal solutions.

## Thinking Mathematically

Perimeter of 10 pentagons = 32
Perimeter of 15 pentagons = 47
The middle pentagons each have 3 sides in the perimeter. The outer two have 4 sides in the perimeter. So a 10 pentagon chain would have a perimeter of
(8 x 3) + 8 units.

## Problem of the Week

Since each child ate one fourth of the nuts, two fourths or one half are gone, leaving one half of the original number. Eighty is one half of 160, so the sack contained 160 nuts.

## Looking Out For Math

Five different rectangles
1 x 36 has largest perimeter
6 x 6 has the smallest perimeter

## Fraction Action

A.    3/8
B.    11/12
C.    2/4 or 1/2

Students should draw a picture or use fraction bars to help them if needed.

## Mental Math

Directions to Students: Number your paper from 1 to 8. Write your answers as the questions are called out. Each question will be repeated only once.

1.    50 less than 904
2.    8 x 2 ÷ 4 + 5 ÷ 3
3.    Nearest ten cents: $3.28
4.    55 - 25
5.    121 x 2
6.    20 minutes before 9:35
7.    Number of centimeters in 10 meters
8.    Which is smaller -- 1/8 or 2/3?

## Keeping Skills Sharp

1.    39
2.    199
3.    7
4.    544
5.    2
6.    0° C
7.    $46.90
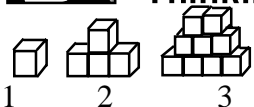8.    80,000
9.    Monday
10.   6

## Calculate!

Have you ever turned your calculator upside down and been able to read a word? Create some equations whose results will spell BOB or LESS or other words!

(1.05)

## Thinking Mathematically



1      2      3

| Building Number | Number of Blocks Needed |
|-----------------|-------------------------|
| 1 | 1 |
| 2 | 4 |
| 3 | 9 |
| 4 | 16 |
| ... | |

As these "buildings" grow, more blocks are needed. Build the buildings. Make a chart like this one. Fill in the chart. Predict the number of blocks needed for the 50th building.
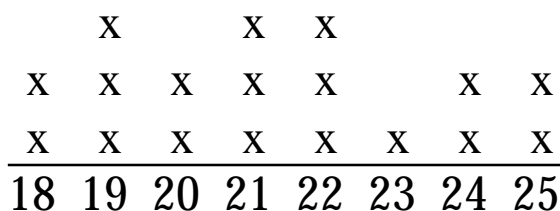
What is the rule?

(5.01b)

## Exploring Data

(4.01)

The gremlins have been messing with the computer again! They erased the title and labels on this line plot. Write a story to tell what it could have been about.

```
        X           X   X
  X     X   X   X   X           X   X
  X     X   X   X   X   X   X   X   X
 ───────────────────────────────────
 18  19  20  21  22  23  24  25
```

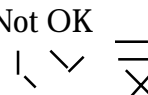## Looking Out For Math

***Toothpick Explorations***

With a partner or group, try to find all the different ways to arrange four toothpicks following these rules:

1. Each toothpick must touch the end of at least one other toothpick.
2. Toothpicks must be placed either end to end or to make square corners.
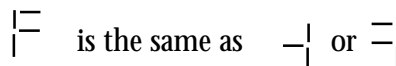
OK                              Not OK

Make sure no shapes are alike.

is the same as      or

Record your shapes on dot paper.
Can you find 16 shapes?

(5.03a)
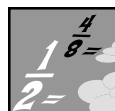
## Fraction Action

Write the place value for the digit 6 in each number:

a)      3**6**.17      _____
b)      5.**6**4      _____
c)      **6**03.18      _____
d)      14.7**6**      _____
e)      371.**6**      _____
f)      9.0**6**      _____

Write the digit in the **tenths** place:

g)      45.81      _____
h)      903.5      _____
i)      1,426.08      _____
j)      215.37      _____      (1.01b)
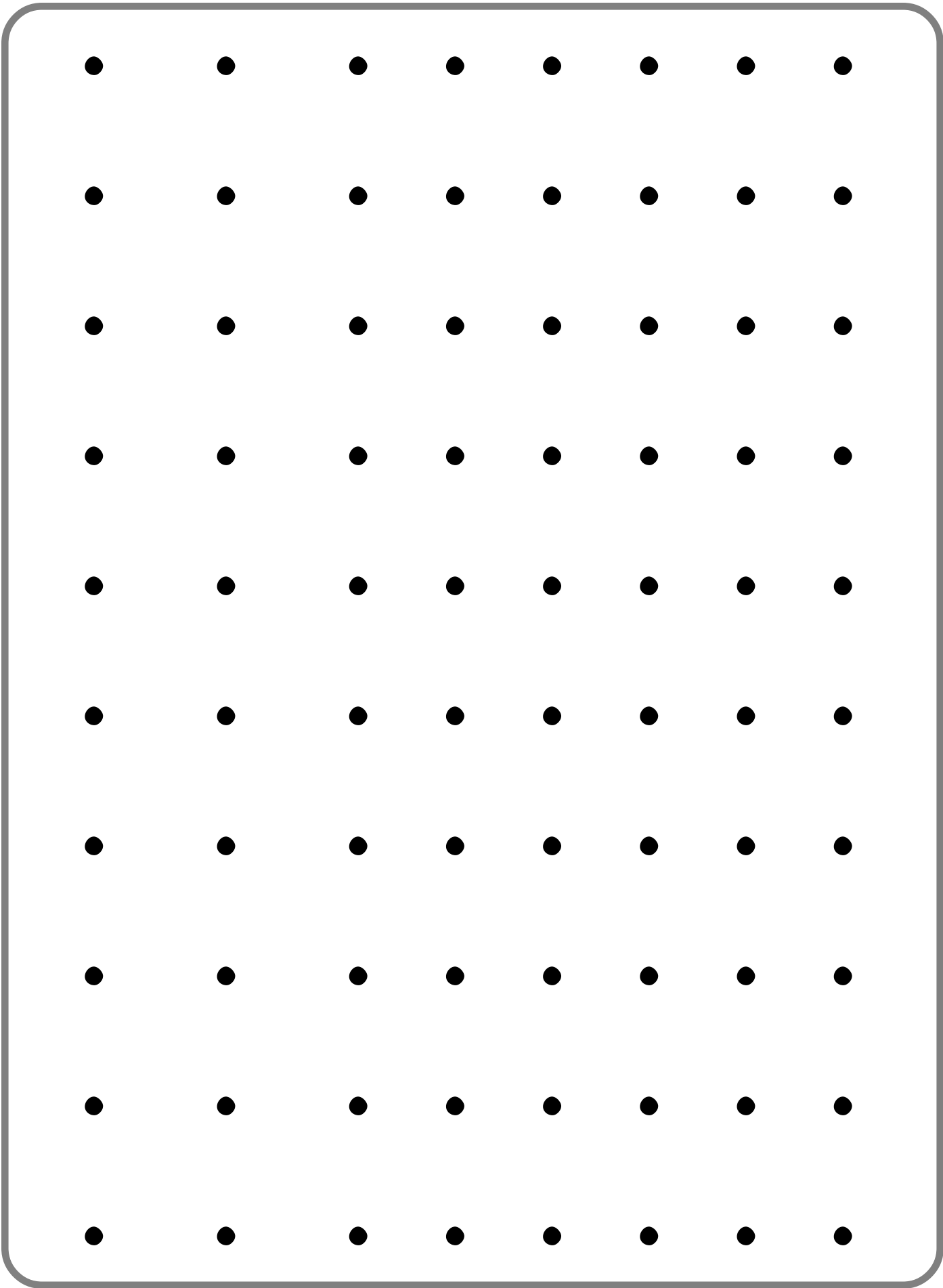
# The Great Raleigh Road Race

145  203  300  51  93  77  95

86

99  100  315  47  350

77

50  221

20  403  15  266  173  49  61

91  37  330  315  85

301  14  221  102

27  74  48

59  33  19  63  663

**START**
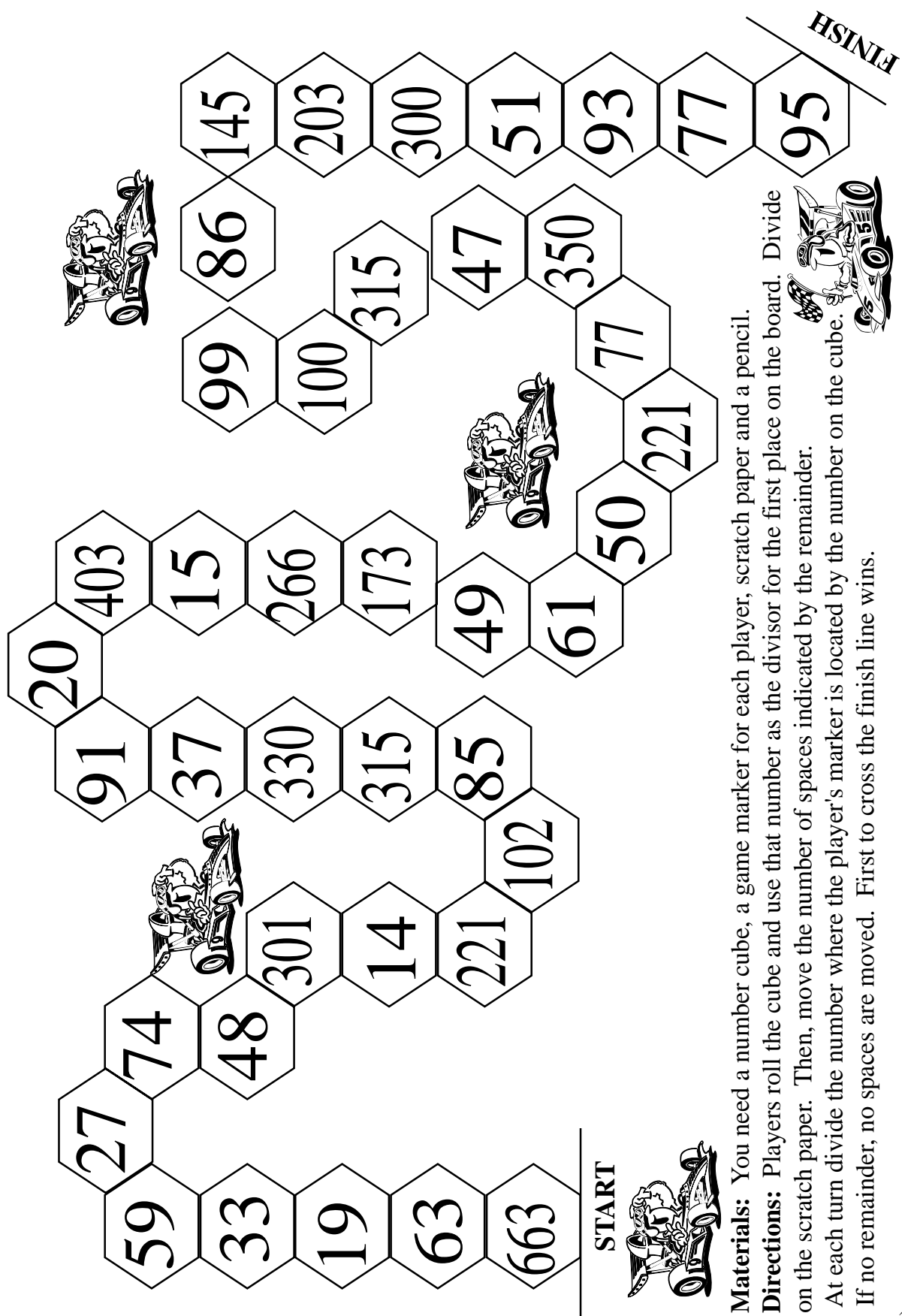
**Materials:** You need a number cube, a game marker for each player, scratch paper and a pencil.
**Directions:** Players roll the cube and use that number as the divisor for the first place on the board. Divide on the scratch paper. Then, move the number of spaces indicated by the remainder.
At each turn divide the number where the player's marker is located by the number on the cube.
If no remainder, no spaces are moved. First to cross the finish line wins.

(1.02b)
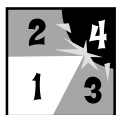
# Keeping Skills Sharp

1. $346 + 33{,}456 + P = 34{,}637$  2. $354 - D = 318$

3. $T \div 8 = 4$  4. $72 \times 6 = K$

5. $V \div 9 = 9$ remainder 4

6. 3 quarters + 5 dimes + 6 pennies =

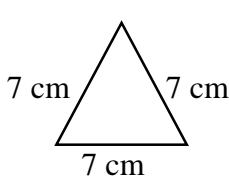7. What is the perimeter of this triangle?  7 cm  7 cm

8. Write in words: 42,805.  7 cm

9. Doug went to bed at 8:30 p.m. He slept for an hour and 15 minutes. He raided the refrigerator for 30 minutes and then went back to bed and slept till 6:30 a.m. How long did he sleep?

10. Kelly practiced her dancing 15 minutes on Saturday. Each day she practices ten more minutes than the day before. On what day will she practice for more than an hour?

# Solve this!

Use the digits: 1, 2, 3, 4, 5, 6, 7, 8, 9 and place them in the squares. Use each number only once. The numbers must total the same when they are added horizontally, vertically, and diagonally. Find more than one solution.

## Calculate!

For example: 47,351 x 8 is BOBBLE when the calculator is turned upside down. Possible letters: 0 is O, 1 is I, 2 is Z, 3 is E, 4 is h, 5 is S, 6 is g, 7 is L, 8 is B.

## Thinking Mathematically

Rule: the number of blocks = the building number squared (or the buildings number times itself). Ask the students how each building could be rearranged to form a square.

| Building Number | Number of Blocks Needed |
|---|---|
| 1 | 1 |
| 2 | 4 |
| 3 | 9 |
| 4 | 16 |
| 5 | 25 |
| 50 | 2500 |

## Fraction Action

Answers:
a)    ones
b)    tenths
c)    hundreds
d)    hundredths
e)    tenths
f)    hundredths
g)    8
h)    5
i)    0
j)    3

## Mental Math

Directions to Students: Number your paper from 1 to 8. Write your answers as the questions are called out. Each question will be repeated only once.

1.    Write seventy-two thousand four hundred six.
2.    3 x 2 x 5 + 7
3.    Round to nearest hundred: 3,745
4.    14 + 46
5.    25 ÷ 5
6.    $1.30 less 3 nickels.
7.    Number of inches in 1/2 of a foot
8.    Double 15

## Keeping Skills Sharp

1.    835
2.    36
3.    32
4.    432
5.    85
6.    $1.31
7.    21 centimeters
8.    forty-two thousand eight hundred five
9.    9 hours 30 minutes
10.    Thursday

## Calculate!

Which three consecutive even numbers have a sum of 204?

(1.05)

## Thinking Mathematically

Write a story to illustrate this equation:

$$49 \div 7 = 7$$

(5.02)

## Exploring Data

What happens when the same data is presented with different scales? Revisit questions such as number of absences during one week or the ways that students come to school. Display the data in bar graphs which have different scales. Are your impressions different based upon the visual displays?
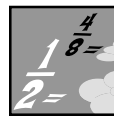
(4.03)

## Looking Out For Math

How many toothpicks are needed for the staircase where the tallest step is 10 steps high?
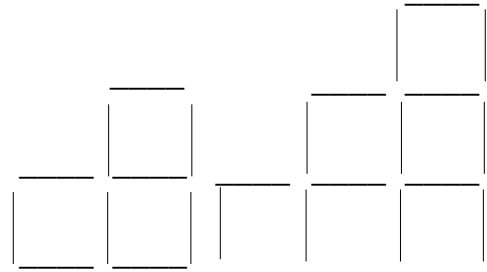
(5.01)

## Fraction Action

A decimeter (dm) is $\frac{1}{10}$ of a meter (m)

A centimeter (cm) is $\frac{1}{100}$ of a meter (m)

Give each measurement in meters, written in decimal form:

Example:
    6 m, 4 dm =        6.4 m
a)    7 m, 5 dm =      _____
b    4 m, 2 dm, 8 cm = _____
c)    7 dm, 2 cm =      _____
d)    14 m, 9 cm =      _____
e)    23 m, 8 dm, 1 cm = _____
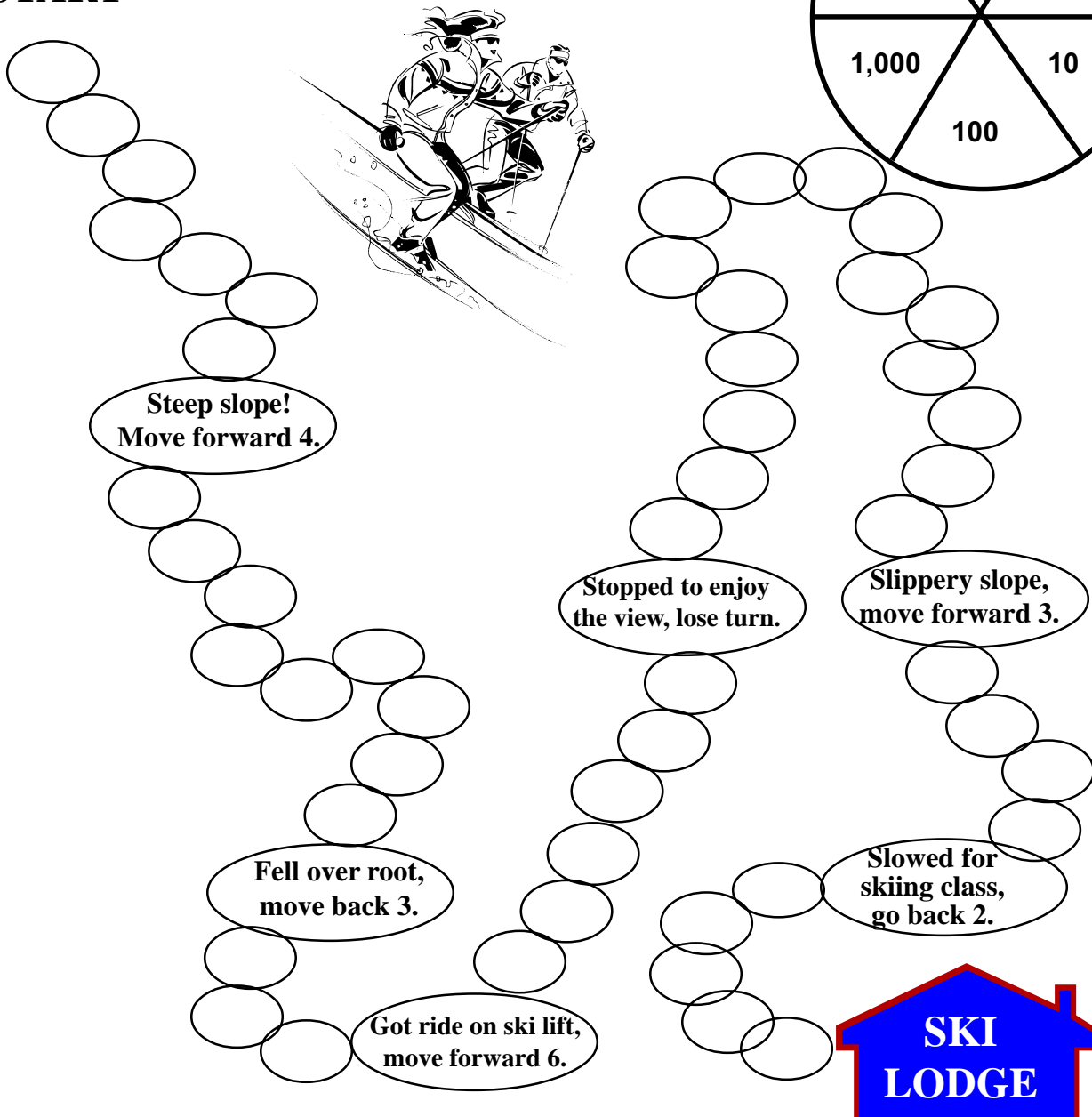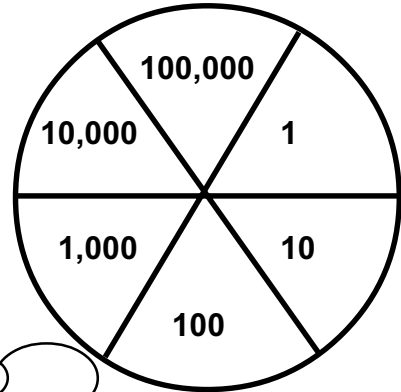f)    30 m, 3 dm =      _____

(1.01b. 1.03)

# Digit Ski

**Number of Players:** 2-4
**Materials:** You need digit cards, game markers, and a spinner with pencil and small paper clip.
**Directions:**
1.    Place digit cards face down in a pile. Place markers on start.
2.    Take turns. Pick the top card from the pile and spin the spinner.
3.    Look at the digit in the place named by the spinner. Move that many spaces.
4.    Return the card to the bottom of the pile.
5.    If you land on a space with directions, follow them.
6.    The winner is the first person to reach the Ski Lodge.

## START

Spinner: 100,000 | 1 | 10 | 100 | 1,000 | 10,000

**Steep slope! Move forward 4.**

**Stopped to enjoy the view, lose turn.**

**Slippery slope, move forward 3.**

**Fell over root, move back 3.**

**Slowed for skiing class, go back 2.**

**Got ride on ski lift, move forward 6.**

**SKI LODGE**

| | |
|---|---|
| **793,926** | **618,334** |
| **987,245** | **825,691** |
| **734,518** | **342,657** |
| **232,469** | **377,821** |
| **561,385** | **483,518** |
| **718,746** | **129,152** |

| | |
|---|---|
| **123,976** | **828,030** |
| **456,926** | **100,794** |
| **654,447** | **208,554** |
| **983,270** | **788,300** |
| **350,302** | **608,004** |
| **570,112** | **408,241** |

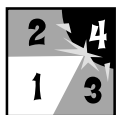| | |
|---|---|
| **251,921** | **647,817** |
| **815,384** | **583,561** |
| **128,773** | **964,232** |
| **629,397** | **433,816** |
| **542,789** | **196,528** |
| **815,437** | **756,243** |

# Keeping Skills Sharp

1. Find the sum of 3,489 and 69,896

2. 9000 - 7496 = U

3. 235 ÷ H = 47

4. 346 x R = 1038

5. 100 x 100 = X

6. What type of angle is showing on a clock at 3PM?

7. 1 mile = ____ feet

8. Write in words:  30,068.

9. Merle bought a notebook for $3.50, a game for $5.75, and a package of pencils for $0.90.  How much change would she get if she gave the clerk $10.50?

10. The temperature has dropped 4 degrees every hour for the last three hours.  Water has started to freeze!  What was the temperature three hours ago?

# Solve this!

When the Centerville football team won the championship with a field goal in the last seconds of the game, they were ecstatic!  The 11 members of the team ran around the field giving each other "high fives."

If each player gave each teammate a high five, how many high fives would be given altogether?

Explain your solution.

(4.02)

## Thinking Mathematically

If division stories are still hard for some students to write, you may need to revisit the meaning of division with them in some concrete ways.

## Exploring Data

It is important to help students see how data can be skewed by the way it is presented so they can begin to analyze real world statistical information.

## Calculate!

66, 68, 70

.

## Looking Out For Math

150

## Fraction Action

a)   7.5 m
b)   4.28 m
c)   0.72 m
d)   14.09 m
e)   23.81 m
f)   30.3 m

## Problem of the Week

55 high fives.

# Mental Math

Directions to Students: Number your paper from 1 to 8. Write your answers as the questions are called out. Each question will be repeated only once.

1.   Which is smaller?  5,001 or 5,862
2.   5 x 0 x 4 + 12 - 9
3.   Nearest thousand:  6,199
4.   60 - 12
5.   18 ÷ 6
6.   15 minutes after 12:55
7.   Number of inches in 10 feet
8.   1/2 of 100

# Keeping Skills Sharp

1.   73,385
2.   1504
3.   5
4.   3
5.   10,000
6.   right
7.   5,280 feet
8.   thirty thousand
      sixty-eight
9.   $0.35
10.  $44^0$ F or $12^0$ C