



CALVERT™
PUBLICATIONS

4th grade

MATH

MATH 400

Teacher's Guides

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MATH SCOPE & SEQUENCE

GRADE 4

WHOLE NUMBERS • Naming whole numbers • Naming fractions • Sequencing patterns • Numbers to 1,000	Unit 1
MULTIPLYING WHOLE NUMBERS • Operation symbols • Multiplication — 1-digit multipliers • Addition and subtraction of fractions • Numbers to 10,000	Unit 2
SEQUENCING AND ROUNDING • Multiplication with carrying • Rounding and estimation • Sequencing fractions • Numbers to 100,000	Unit 3
LINES AND SHAPES • Plane and solid shapes • Lines and line segments • Addition and subtraction • Multiplication with carrying	Unit 4
DIVISION AND MEASUREMENTS • Division — 1-digit divisors • Families of facts • Standard measurements • Number grouping	Unit 5
DIVISION, FACTORS, AND FRACTIONS • Division — 1-digit divisors with remainders • Factors and multiples • Improper and mixed fractions • Equivalent fractions	Unit 6
WHOLE NUMBERS AND FRACTIONS • Multiplication—2-digit multipliers • Simplifying fractions • Averages • Decimals in money problems • Equations	Unit 7
WHOLE NUMBERS AND FRACTIONS • Division — 1-digit divisors • Fractions and unlike denominators • Metric units • Whole numbers: +, −, ×, ÷	Unit 8
DECIMALS AND FRACTIONS • Reading and writing decimals • Adding and subtracting mixed numbers • Cross multiplication • Estimation	Unit 9
ESTIMATION, CHARTS, AND GRAPHS • Estimation and data gathering • Charts and graphs • Review numbers to 100,000 • Whole numbers: +, −, ×, ÷	Unit 10

- l. 4 20
m. 10 20
n. 30 9
o. 21 40
p. 25 24
q. 3 8
r. 6 30
s. 45 12
t. 10 3
u. 36 10
v. 20 20
w. 4 20

4.14 Teacher check

Possible answers:

$$\begin{array}{r} 4 \\ \times 2 \\ \hline 8 \end{array} \quad \begin{array}{r} 5 \\ \times 3 \\ \hline 15 \end{array} \quad \begin{array}{r} 4 \\ \times 6 \\ \hline 24 \end{array} \quad \begin{array}{r} 2 \\ \times 8 \\ \hline 16 \end{array} \quad \begin{array}{r} 3 \\ \times 9 \\ \hline 27 \end{array} \quad \begin{array}{r} 5 \\ \times 8 \\ \hline 40 \end{array}$$

4.15 Suggested answers:

	half				
dollars	dollars	quarters	dimes	nickels	pennies
a. 8	1		1	1	
8			6		5
b. 2		3			
	5	1			

- 4.16 a. \$3.65
b. \$22.04
c. 132¢
d. \$9.70

4.17 125 94 663 10,945 2,193

4.18 71 49 196 561 238

- 4.19 a. 9 11 10
7 13 12
10 8 9
5 15 6
9 7 17
10 13 16
b. 1 6 5
4 5 8
2 4 9
1 8 6
4 9 5
3 8 9
c. 2 30 8
2 18 56
8 20 15
0 7 12
15 0 28
4 32 36

- 4.20 a. Eight plus nine equals seventeen.
b. Twelve minus seven equals five.
c. Four times three equals twelve.

SELF TEST 4

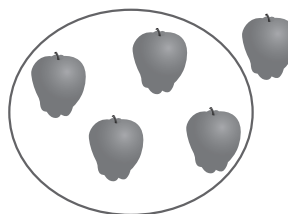
4.01 fraction bar $\rightarrow \frac{1}{4}$ numerator
denominator

4.02

	O	X	
O	O	X	

- a. $\frac{1}{8}$
b. $\frac{3}{8}$
c. $\frac{2}{8}$
d. $\frac{2}{8}$

4.03



- a. $\frac{4}{5}$
b. four-fifths

4.04 two-twelfths one-third

4.05 $\frac{5}{8}$ $\frac{7}{9}$

4.06 Suggested answers:

	half				
dollars	dollars	quarters	dimes	nickels	pennies
4		2	2		2
4	1		1	2	2

- 4.07 a. \$5.48
b. \$63.07

- 4.08 a. Five plus eight equals thirteen.
b. Eight minus zero equals eight.
c. Six times nine equals fifty-four.

SECTION 5

- 5.1

5, 6, 7, 8
- 5.2


- 5.3

51
- 5.4

subtract
- 5.5

a. 8,360

b. eight thousand, three hundred sixty

c. 836

d. eight hundred thirty-six

e. $836 < 8,360$

f. place holder
- 5.6

1,361
- 5.7

24
- 5.8

a. 20

b. + 4
- 5.9

a. $N = 2,609$

b. $N = 9$

c. $N = 12$
- 5.10

$1,000 + 800 + 40 + 5$
- 5.11

thousands
- 5.12

\$1.42
- 5.13

a. >

b. <

c. =

d. <

e. =

f. >

g. ≠

h. ≠

i. <

j. >
- 5.14

a. 20

b. $\frac{5}{20}$
- 5.15

a. 25

b. $\frac{5}{25}$

c. $\frac{8}{25}$

d. $\frac{12}{25}$
- 5.16

a. sixth

b. ninth
- 5.17

a. $\frac{9}{16}$

b. $\frac{7}{16}$
- 5.18

a. five-sixths

b. one-ninth
- 5.19

$5 + 7 = 12$

$7 + 5 = 12$

$12 - 5 = 7$

$12 - 7 = 5$

- 5.20

48
- 5.21

$$\begin{array}{r} 42 \\ \times 4 \\ \hline 168 \end{array}$$
- 5.22

a. thirty

b. thirty-one
- 5.23

$6,000 + 200 + 20 + 3$
- 5.24

a. 12 feet

b. + 3 feet
- 5.25

a.

$\frac{5}{9}$

$\frac{9}{16}$

$\frac{4}{7}$

$\frac{1}{17}$

$\frac{10}{18}$

b. Three-ninths plus two-ninths equals five-ninths.

c. Six-sevenths minus two-sevenths equals four-sevenths.
- 5.26

10
- 5.27

400
- 5.28

George
- 5.29

MARK AND MELISSA'S FRIENDS										
Brown Eyes										
Left-handed										
Sister										
Brother										
Pet										
Book										
	0	1	2	3	4	5	6	7	8	9 10

ANSWER KEYS

SECTION 1

- 1.1 a. thirty-eight thousand, six hundred forty-three
b. nine thousand, five hundred eighty-two
c. eighty-seven thousand, fifty-three
d. four thousand, one

1.2

a.		8	0	5
		800	0	5
b.	5	3	8	0
	5,000	300	80	0
c.	1	8	4	6
	10,000	8,000	400	60
				2

1.3 place holder

- 1.4 a. 90 b. 80
c. 400 d. 600
e. 500 f. 700
g. 30 h. 800

- 1.5 a. 50
b. $40 + 20 + 40 = 100$

- 1.6 a. $6 + 7 = 13$ $7 + 6 = 13$
 $13 - 6 = 7$ $13 - 7 = 6$
b. $8 + 9 = 17$ $9 + 8 = 17$
 $17 - 8 = 9$ $17 - 9 = 8$
c. $3 + 8 = 11$ $8 + 3 = 11$
 $11 - 3 = 8$ $11 - 8 = 3$
d. $0 + 6 = 6$ $6 + 0 = 6$
 $6 - 0 = 6$ $6 - 6 = 0$

- 1.7 a. 9,000 9,000 3,000
b. 4,000 5,000 4,000
c. 6,000 3,000 8,000

- 1.8 a. 3,000 6,000 9,000
b. 2,000 6,000 1,000
c. 10,000 8,000 9,000

1.9 $1,000 + 3,000 = 4,000$

- 1.10 a. $\begin{array}{r} 83 \text{ multiplicand} \\ \times 3 \text{ multiplier} \\ \hline 249 \text{ product} \end{array}$ $\begin{array}{r} 51 \text{ multiplicand} \\ \times 2 \text{ multiplier} \\ \hline 102 \text{ product} \end{array}$
b. $\begin{array}{r} 304 \text{ multiplicand} \\ \times 2 \text{ multiplier} \\ \hline 608 \text{ product} \end{array}$ $\begin{array}{r} 731 \text{ multiplicand} \\ \times 3 \text{ multiplier} \\ \hline 2,193 \text{ product} \end{array}$

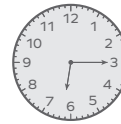
1.11 125 162 532 156

- 1.12 a. 64 102 275 222
b. 234 260 138 574
c. 520 188 249 426
d. 465 378 144 658

- 1.13 a. ① 7② 1 7① ① 1 2⑥

- b. 1 3⑤ 2 3① 5⑧ ① 2 0⑥

1.14



6:15



3:25



9:17



1:53

MATH 404

ALTERNATE TEST

NAME _____

DATE _____

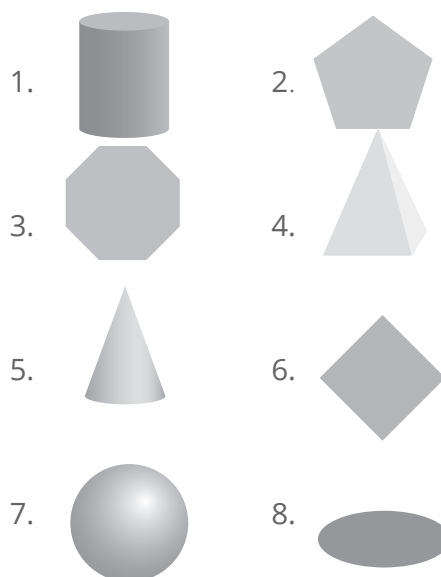
SCORE _____



Each numbered problem = 4 points

1. Match the figure to its shape.

- a. _____ oval
- b. _____ pentagon
- c. _____ octagon
- d. _____ diamond
- e. _____ cylinder
- f. _____ sphere
- g. _____ cone
- h. _____ pyramid



2. A polygon is a figure with a flat shape. What is a word that describes a flat shape?

3. How many dimensions does a plane shape have? _____

4. List two examples of plane shapes found in your home.

5. List two examples of solid shapes found in your home.

6. Draw a line at least 4 inches long and label it correctly. Using the same line, show a line segment 3 inches long and label it.

SECTION 5

- 5.1

$P = 2L + 2W$
- 5.2

$A = L \times W$
- 5.3

5 ft.

3 ft.

$P = 2L + 2W$

$A = L \times W$

$P = (2 \times 5) + (2 \times 3)$

$A = 5 \times 3$

$P = 10 + 6$

$A = 15$

$P = 16$

a. 16 linear feet

b. 15 square feet

c. yes
- 5.4

fourth
- 5.5

eight hundred forty-six thousand, ninety-two
- 5.6

6 5 7
- 5.7

8,000
- 5.8

940
- 5.9

a.

b.

c.

d.
- 5.10

a. $N = 78 + (6 - 4)$

$N = 78 + 2$

$N = 80^\circ$

b. $N = (4 \times \$2.25) - \$.75$

$N = \$9.00 - \$.75$

$N = \$8.25$

c. $N = \$15.00 - (2 \times \$5.60)$

$N = \$15.00 - \11.20

$N = \$3.80$

d. $N = (6 \times 12) + (8 \times 14)$

$N = 72 + 112$

$N = 184 \text{ inches}$
- 5.11

4 quarts
- 5.12

6
- 5.13

52 miles

- 5.14

a.

b. 204 yards

c. 612 feet
- 5.15

plane
- 5.16

circle
- 5.17

$\frac{1}{7}, \frac{2}{7}, \frac{3}{7}, \frac{4}{7}, \frac{5}{7}, \frac{6}{7}, \frac{7}{7}$
- 5.18

28
- 5.19

90
- 5.20

0
- 5.21

< >
- 5.22

965
- 5.23

XLIV
- 5.24

35
- 5.25

square feet
- 5.26

=

$5 \times 12 = 60$

$10 \times 6 = 60$
- 5.27

a. 6

b. $\frac{2}{6}$

c. $\frac{1}{6}$

d. $\frac{3}{6}$
- 5.28

$300,000 + 80,000 + 5,000 + 200 + 0 + 5$
- 5.29

$5,000 - 4,000 = 1,000$
- 5.30

sum
- 5.31

$\frac{6}{6}$
- 5.32

54
- 5.33

4,170
- 5.34

4 8 7

4 6 4
- 5.35

five-eighths
- 5.36

5 20
- 5.37

108 inches
- 5.38

FAVORITE FRUIT

Grapes	
Apples	
Bananas	
Watermelon	
Oranges	
Strawberries	

SECTION 3

3.1 a. 110 99 11

b. 77 66 11

c. 2 11 88

d. 8 5 3

e. 33 11 44

f. 11 9 6

3.2 a. 12 12 10

b. 2 8 12

c. 7 3 108

d. 48 120 12

e. 72 9 6

f. 12 5 96

3.3 a. 6 1, 2, 3, 6

6, 2, 18, 24, 30

b. 4 1, 2, 4

4, 8, 12, 16, 20

c. 9 1, 3, 9

9, 18, 27, 36, 45

d. 10 1, 2, 5, 10

10, 20, 30, 40, 50

e. 12 1, 2, 3, 4, 6, 12

12, 24, 36, 48, 60

f. 7 1, 7

7, 14, 21, 28, 35

3.4 6,479 98,511 181 1,720

3.5 271 246 881 2,537

3.6 a. $\frac{3}{8}$ $\frac{10}{9}$ $\frac{8}{7}$ $\frac{2}{5}$

b. $\frac{6}{15}$ $\frac{1}{7}$ $\frac{5}{13}$ $\frac{9}{8}$

c. $\frac{1}{3}$ $\frac{5}{12}$ $\frac{8}{6}$ $\frac{12}{9}$

3.7 a. $\frac{3}{8}, \frac{2}{5}, \frac{6}{15}, \frac{1}{7}, \frac{5}{13}, \frac{1}{3}, \frac{5}{12}$

b. $\frac{10}{9}, \frac{8}{7}, \frac{9}{8}, \frac{8}{6}, \frac{12}{9}$

3.8 a. $3\frac{3}{6}, 13\frac{6}{7}, 3\frac{3}{12}, 10\frac{11}{18}$

b. $9\frac{2}{3}, 4\frac{2}{12}, 7\frac{2}{5}, 11\frac{6}{9}$

c. Five and four-sixths minus two and one-sixth equals three and three-sixths.

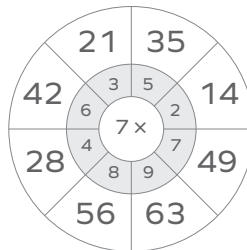
d. Seven and one-third plus two and one-third equals nine and two-thirds.

3.9 a. 7 R3 5 R2 7 R1

b. 6 R1 5 R2 4 R2

c. 9 R2 9 R3 7 R2

3.10 a.



b.

+	7	3	8	6
0	7	3	8	6
7	14	10	15	13
5	12	8	13	11

3.11 a. 7 90

b. 65 24

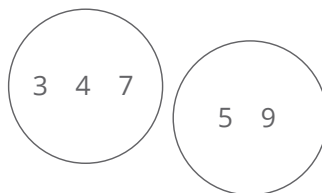
c. 212 1,400

3.12 a. LIII DLXXIV

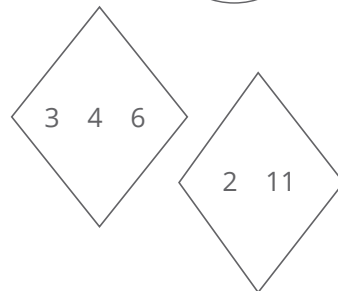
b. LXXXIX CCCXXVI

c. CXXXII MDXXV

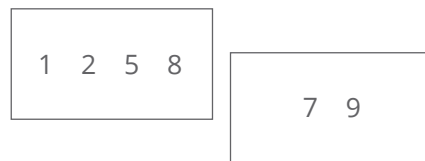
3.13 a.



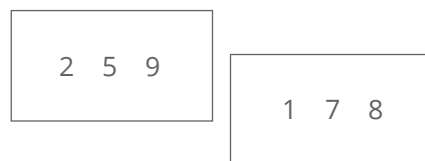
b.



c.



or



- 2.6

36

1

2,000

1

16

2

4

16

4

1
- 2.7

a.

8

3

5

0

4

80,000

3,000

500

0

4

b.

7

9

1

3

4

2

700,000

90,000

1,000

300

40

2
- 2.8

a.

12

b.

4
- 2.9

a.

18

3

6

b.

24

3

8

c.

12

4

3

d.

20

4

5

e.

15

3

5

f.

20

4

5
- 2.10

2, 6, 18
- 2.11

7, 11
- 2.12

a.

0

b.

even

c.

5 or 0

d.

0
- 2.13

a.

end point

ray

angle

line segment

- b.

line

line segment
- c.

line segment

end points
- d.

ray

angle
- e.

ray
- f.

angle

SELF TEST 2

- 2.01

a.

1,288

b.

564

c.

1,406

d.

2,436
- 2.02

a.

$\frac{6}{5} = 1\frac{1}{5}$

b.

$\frac{16}{3} = 5\frac{1}{3}$

c.

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

d.

$\frac{8}{12} = \frac{2}{3}$
- 2.03

36

1

2,000

1

16

2

4

16

4

1
- 2.04

1

7

6

3

0

2

100,000

70,000

6,000

300

0

2
- 2.05

5
- 2.06

a.

0

b.

even

c.

5 or 0

d.

0
- 2.07

a.

line

- b.

line segment
- c.

line segment

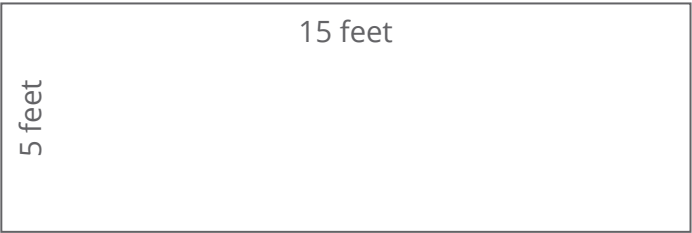
end points
- d.

end point

ray
- e.

angle

Use this drawing to answer questions 18 and 19.



- 18. Find the perimeter. *Answer must be labeled correctly.*
- 19. Find the area. *Answer must be labeled correctly.*
- 20. Susan bought thirteen treats for her party at forty-three cents each. How much did she spend altogether? _____
- 21. Write a sequence pattern of (+ 4, - 2). _____

Write answers in the multiplication chart.

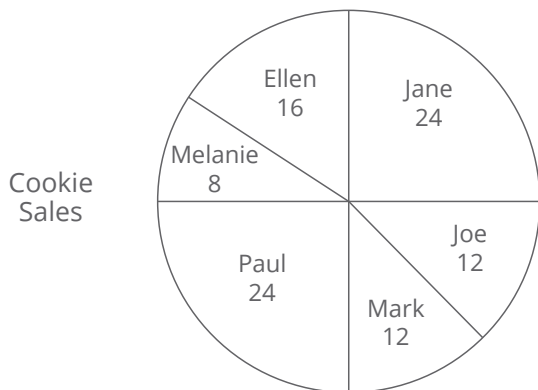
	×	2	8	7	3	0	5	1	9	4	6
22.	6										
23.	9										
24.	5										
25.	3										

5.28 36 1
 2,000 1
 16 2
 4 16
 4 1
 365 12

5.29 a. 71¢
 b. \$4.45

5.30 Three hundred seventy-five divided by seven equals fifty-three, remainder four.

5.31 Teacher check



SELF TEST 5

5.01 a. $\begin{array}{r} 2,375 \\ + 4,750 \\ \hline 7,125 \end{array}$ addend addend sum
 b. $\begin{array}{r} 8,604 \\ - 4,925 \\ \hline 3,679 \end{array}$ minuend subtrahend difference

c. $\begin{array}{r} 493 \\ \times 8 \\ \hline 3,944 \end{array}$ multiplicand multiplier product
 d. 82 quotient
 492 dividend
 6 is divisor

5.02 1, 2, 3, 6, 9, 18

5.03 4, 8, 12, 16, 20

5.04 12

5.05 prime

5.06 $\begin{array}{r} 5 \\ 500,000 \\ + 2,931 \\ \hline 6,677 \end{array}$ $\begin{array}{r} 6 \\ 60,000 \\ + 3,000 \\ \hline 7,000 \end{array}$ $\begin{array}{r} 3 \\ 3,000 \\ - 2,135 \\ \hline 4,624 \end{array}$ $\begin{array}{r} 4 \\ 400 \\ - 2,000 \\ \hline 5,000 \end{array}$ $\begin{array}{r} 8 \\ 80 \\ - 2,000 \\ \hline 5,000 \end{array}$ $\begin{array}{r} 2 \\ 2 \end{array}$

5.07 a. $\begin{array}{r} 3,746 \\ + 2,931 \\ \hline 6,677 \end{array}$ $\begin{array}{r} 4,000 \\ + 3,000 \\ \hline 7,000 \end{array}$ b. $\begin{array}{r} 6,759 \\ - 2,135 \\ \hline 4,624 \end{array}$ $\begin{array}{r} 7,000 \\ - 2,000 \\ \hline 5,000 \end{array}$

5.08 79 1,520

5.09 a. $\neq$ b. $=$ c. $\neq$ d. $\neq$

5.010 a. circle
 b. 6
 c. 25

ANSWER KEYS

SECTION 1

- 1.1

a. thousands, units
 b. hundreds, tens, ones
 c. comma
 d. hyphen
- 1.2

10ths, 100ths, 1,000ths
- 1.3

Teacher check
- 1.4

a. $\frac{3}{10}$
 b. $\frac{6}{10}$ six tenths
 c. .5 five tenths
 d. .8 $\frac{8}{10}$
 e. $\frac{35}{100}$
 f. $\frac{75}{100}$ seventy-five hundredths
 g. .84 eighty-four hundredths
 h. .63 $\frac{63}{100}$
 i. $\frac{409}{1,000}$
 j. $\frac{234}{1,000}$ two hundred thirty-four thousandths
 k. .161 one hundred sixty-one thousandths
 l. .942 $\frac{942}{1,000}$
- 1.5

a. \$80.21 \$84.83 \$116.79 \$83.13
 b. \$10.91 \$16.25 \$13.11 \$19.79
 c. \$64.01 \$63.88 \$50.21 \$55.33
 d. \$34.17 \$41.06 \$30.64 \$36.39
- 1.6

a. 852 3,605 4,338 2,624
 b. 16,800 18,468 57,684 30,153
 c. 72,020 112,772 802,032 116,528

- 1.7
- 1.8

hexagon
- 1.9

a.

×	0	3	4
2	0	6	8
6	0	18	24
8	0	24	32

b.

÷	÷2	÷3	÷6
24	12	8	4
12	6	4	2
6	3	2	1

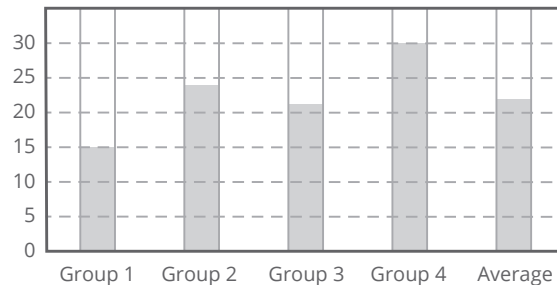
SELF TEST 1

- 1.01** a. 4
b. 5
c. 6
d. 2
e. 1
f. 3
- 1.02** a. – d. Teacher check
e. Total the numbers and divide by the number of groups.
f. Teacher check
g. Estimation helps us decide whether we have a logical answer.
- 1.03** a. – f. Teacher check
g. Some groups are too large to count. A random sample represents the group and is easier to count. It is more exact than predicting.

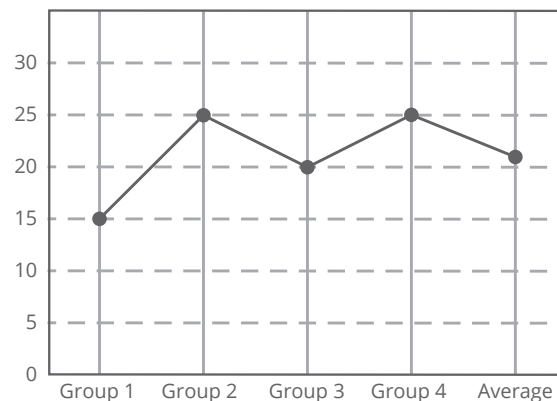
SECTION 2

Note: This section is all suggested answers.
Teacher check.

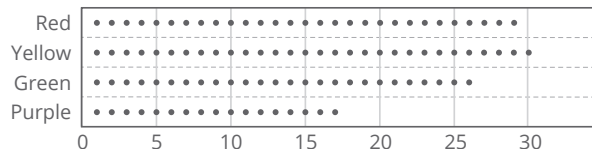
2.1



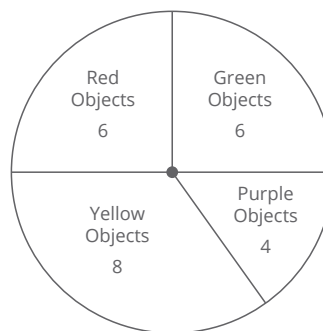
2.2



2.3



2.4



MATH 410

ALTERNATE TEST

NAME _____

DATE _____

SCORE _____



1. Match the following items (this exercise, 20 points).

- | | |
|------------------------|--|
| a. _____ random sample | 1. uses wide lines to show data |
| b. _____ line graph | 2. represents the whole of the data |
| c. _____ data | 3. every member of a large group has an equal chance of being chosen |
| d. _____ picture graph | 4. to tell something in advance |
| e. _____ bar graph | 5. an opinion of the amount, value, or worth of something |
| f. _____ circle graph | 6. connects points to show data |
| g. _____ estimation | 7. an arrangement of data in logical order |
| h. _____ predict | 8. uses illustrations to show data |
| i. _____ average | 9. a list of facts from which a conclusion can be drawn |
| j. _____ chart | 10. dividing the total number by the number being counted |

2. Complete these problems (each problem, 4 points).

a.

$$\begin{array}{r} 9,246 \\ + 3,825 \\ \hline \end{array}$$

b.

$$\begin{array}{r} 7,603 \\ - 5,491 \\ \hline \end{array}$$

c.

$$\begin{array}{r} 8,205 \\ \times 63 \\ \hline \end{array}$$

d.

$$6 \overline{)293}$$



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