Name _____ Date _____

End-of-Year Test

Part 1

For this part of the test, use only paper and pencil or mental math to solve the problems. Estimate to make sure your answers are reasonable.

1. 1225 − 397

2. 1362 + 3758

3. 2003 − 795

4. 13 × 28

5. 5992 × 4

6. 97 × 50

7. $3\overline{)88}$

8. $5\overline{)735}$

9. A. Explain your estimation strategy for Question 6.

B. Explain a mental math strategy for Question 5.

10. Bessie Coleman School is collecting paper for a recycling program. After three months they collected 3,908 pounds of paper. They collected about the same amount of paper each of the three months.

A. Estimate the amount of paper collected each month. Write a number sentence to show how you found your estimate.

B. Recycling 1 ton (2000 pounds) of paper saves about 17 trees. About how many trees did the students at Bessie Coleman School save during the first three months of the recycling program? Show or tell how you solved this problem.

Name _____ Date _____

11. Use the divisibility rules to answer Questions A-F about these numbers.

238	396	415	360
8235	5050	3063	4977

A. Which numbers are divisible by 2? Tell how you decided.

B. Which numbers are divisible by 3? Tell how you decided.

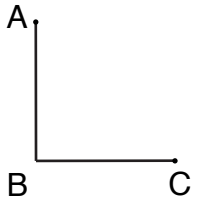
C. Which numbers are divisible by 5? Tell how you decided.

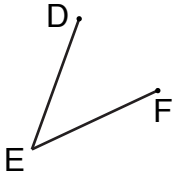
D. Which numbers are divisible by 6? Tell how you decided.

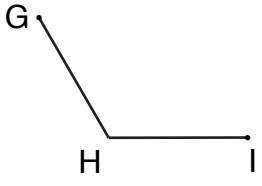
E. Which numbers are divisible by 9? Tell how you decided.

F. Which numbers are divisible by 10? Tell how you decided.

12. Estimate the measure (in degrees) of each of the following angles.







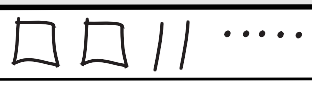
_____ _____ _____

Name _____ Date _____

Part 2

Solve the following problems. You may use any of the tools that you usually use in class including a calculator.

13. Complete the following table. A flat  is equal to 1.

Base-Ten Shorthand	Decimal	Fraction
		$2\frac{25}{100}$
	1.6	
		$3\frac{4}{100}$
		

14. Construct a quadrilateral ABCD using the following rules:

A. $\overleftrightarrow{AB}$ must be parallel to $\overleftrightarrow{DC}$

B. $\overleftrightarrow{AD}$ must be perpendicular to $\overleftrightarrow{DC}$

C. The measure of Angle A equals 90 degrees.

D. The measure of Angle B is less than 90 degrees.

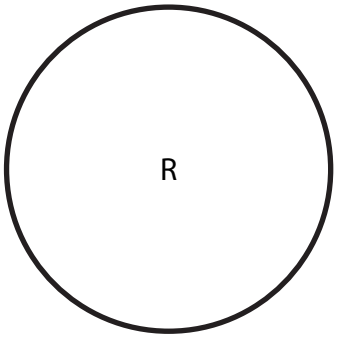
15. Put the following fractions in order from smallest to largest.

A. $\frac{1}{6}, \frac{1}{4}, \frac{1}{2}, \frac{1}{3}$

B. $\frac{4}{12}, \frac{1}{12}, \frac{13}{12}, \frac{14}{12}$

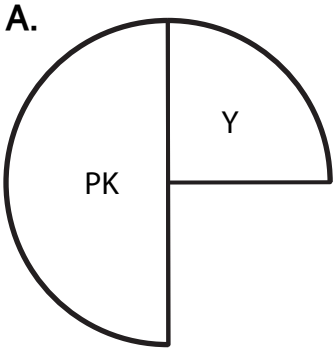
Name _____ Date _____

16. If a red circle is equal to 1 whole, name the following numbers each figure represents. You may use fraction circle pieces to help you.



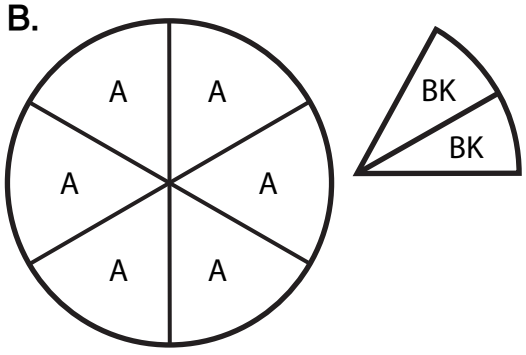
1 Whole

A.



_____

B.



_____

17. Jackie ordered a special gift box of Chocos. There were 12 candies in the box.

A. $\frac{1}{3}$ of the candies in the box have cream filling.

B. $\frac{1}{6}$ of the candies in the box have caramel filling.

C. $\frac{3}{12}$ of the candies in the box are nutty clusters.

D. $\frac{1}{4}$ of the candies in the box have coconut filling.

How many of each kind are in Jackies's box? Complete the table. Write a multiplication number sentence.

Kind of Candy	Number Sentence	Number of Candies in the Box
Cream Filling		
Caramel Filling		
Nutty Clusters		
Coconut Filling		

Name _____ Date _____

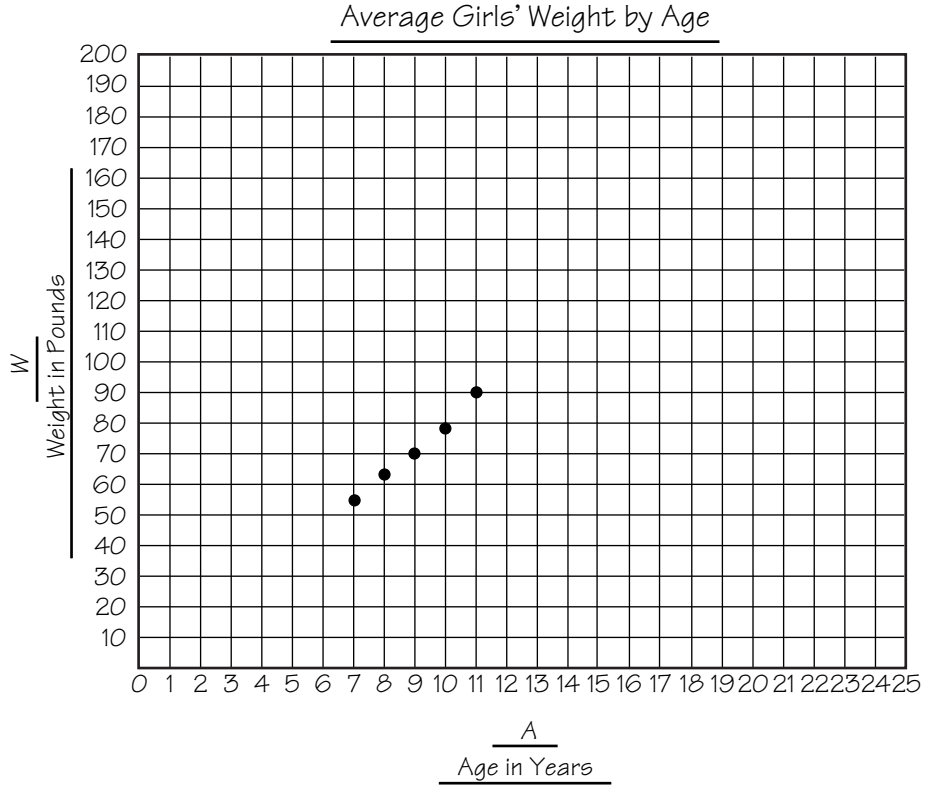
18. Which number sentences are true?

	True	False
A. $3 \times \frac{2}{3} = 3 \times \frac{1}{2} \times 2$		
B. $6 \times \frac{1}{3} = 2$		
C. $4 \times \frac{3}{8} = 2 \times 3$		
D. $4 \times \frac{3}{8} = \frac{3}{8} + \frac{3}{8} + \frac{3}{8} + \frac{3}{8}$		
E. $4 \times \frac{3}{8} = \frac{12}{8}$		
F. $4 \times \frac{3}{8} = \frac{12}{32}$		
G. $3 \times \frac{2}{3} = 6 \times \frac{1}{3}$		

H. Show or tell how you decided whether the number sentence in 18G is true or false.

Name _____ Date _____

19. Use the graph below to answer the following questions. Use a separate sheet of paper to record your answers.



A. Describe the graph.

B. Do the points lie close to a straight line? If so, use a ruler to draw a best-fit line.

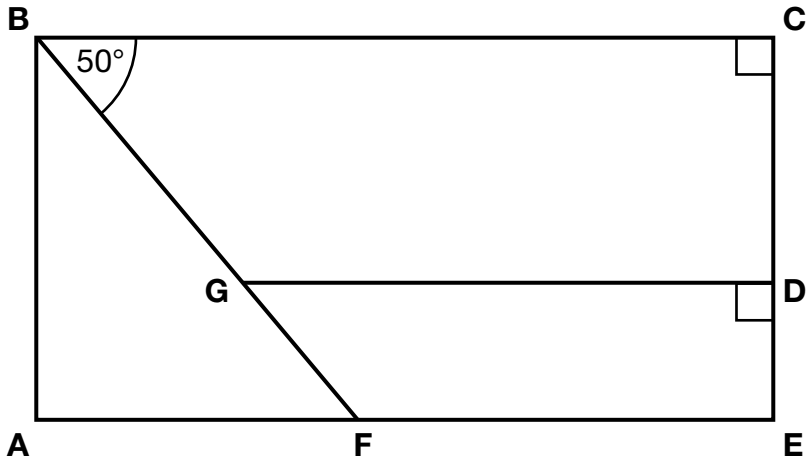
C. If possible, predict the weight of an average 14-year-old girl. Explain your answer.

D. If possible, predict the weight of an average 23-year-old woman. Explain your answer.

E. If possible, predict the weight of an average 1-year-old girl. Explain your answer.

Name _____ Date _____

20. Use the diagram below to answer Questions A–F below.



Find the measures of the following angles.

A. ∠ABF
B. ∠AFB
C. ∠CDG
D. ∠BGD
E. ∠DGF
F. ∠EFG
G. Show or tell how you found the answer for 20D.

Name _____ Date _____

21. Use the fraction circle pieces and the *Fraction Chart* to complete each table.

A. Multiply by $\frac{1}{3}$

Input	Output
6	
9	
12	
15	

B. Multiply by $\frac{2}{3}$

Input	Output
6	
9	
12	
15	

C. Multiply by $\frac{1}{5}$

Input	Output
5	
10	
15	
20	

D. Multiply by $\frac{3}{5}$

Input	Output
5	
10	
15	
20	

E. Multiply by $\frac{1}{4}$

Input	Output
2	
4	
6	
8	
12	
16	

F. Multiply by $\frac{3}{4}$

Input	Output
2	
4	
6	
8	
12	
16	

Teacher Guide

End-of-Year Test

Questions 1–21 (TG pp. 1–8)

1. 828
2. 5120
3. 1208
4. 364
5. 23,968
6. 4850
7. 29 R1
8. 147
9. **A.** Possible strategy: $100 \times 50 = 5000$

   B. Possible strategy: Count up 8 to 6,000. $6{,}000 \times 4 = 24{,}000$; $4 \times 8 = 32$; $24{,}000 - 32 = 23{,}968$.
10. **A.** About 1,300 pounds. $3{,}900 \div 3 = 1{,}300$.

    B. They saved about 34 trees. Possible solution: I rounded 3,908 to 4,000. 4,000 is twice as much as 2000. Since you save about 17 trees for every 2000 pounds of paper you will save about 34 trees with 4000 pounds.
11. **A.** 238, 396, 360, and 5050 are divisible by 2. They are all even numbers.

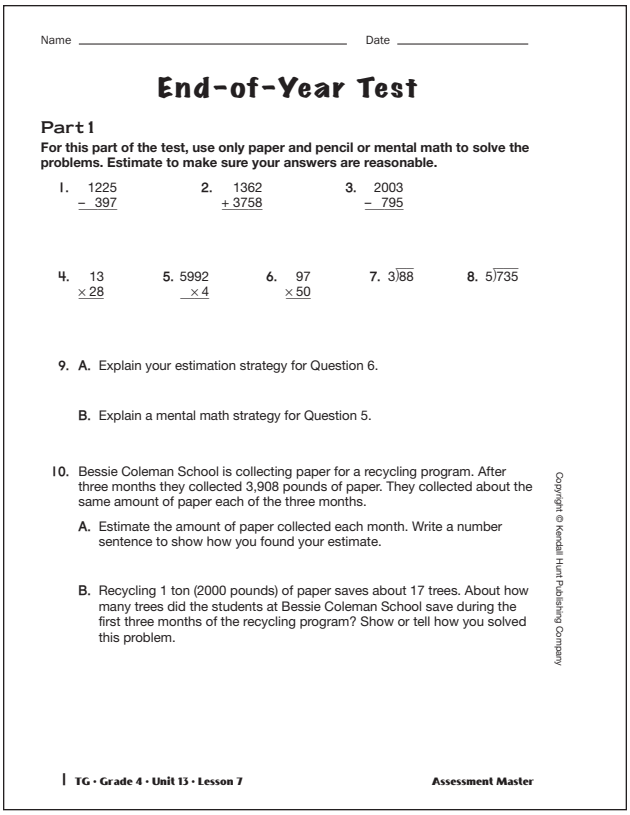
    B. 396, 360, 8235, 3063, and 4977 are divisible by 3. When you add the digits in each number they add up to a number divisible by 3 ($3 + 9 + 6 = 18$, 18 is divisible by 3 so 398 is divisible by 3.)

    C. 415, 360, 8235,and 5050 are divisible by 5. All of these numbers end in 5 or 0.

    D. 396, 360, are divisible by 6. Any number divisible by both 2 and 3 are divisible by 6.

    E. 396, 360, 8235, and 4977 are divisible by 9. When you add the digits in each number they add up to a number divisible by 9 ($8 + 2 + 3 + 5 = 18$, 18 is divisible by 9 so 8235 is divisible by 9).

    F. 360, 5050 are divisible by 10. All of the numbers end in 0.
12. Estimates will vary. 90°, 45°, 120°; accept answers within 10° larger or smaller.



Name _____ Date _____

End-of-Year Test

Part 1

For this part of the test, use only paper and pencil or mental math to solve the problems. Estimate to make sure your answers are reasonable.

1. 1225 − 397
2. 1362 + 3758
3. 2003 − 795
4. 13 × 28
5. 5992 × 4
6. 97 × 50
7. $3\overline{)88}$
8. $5\overline{)735}$

9. **A.** Explain your estimation strategy for Question 6.

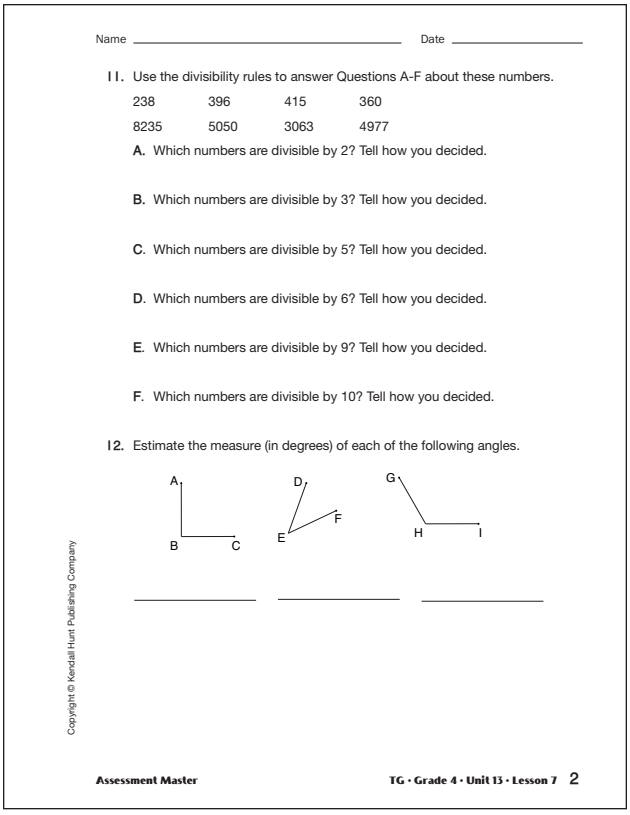
   B. Explain a mental math strategy for Question 5.

10. Bessie Coleman School is collecting paper for a recycling program. After three months they collected 3,908 pounds of paper. They collected about the same amount of paper each of the three months.

    A. Estimate the amount of paper collected each month. Write a number sentence to show how you found your estimate.

    B. Recycling 1 ton (2000 pounds) of paper saves about 17 trees. About how many trees did the students at Bessie Coleman School save during the first three months of the recycling program? Show or tell how you solved this problem.

***Teacher Guide* - Page 1**



Name _____ Date _____

11. Use the divisibility rules to answer Questions A-F about these numbers.

    238 396 415 360

    8235 5050 3063 4977

    A. Which numbers are divisible by 2? Tell how you decided.

    B. Which numbers are divisible by 3? Tell how you decided.

    C. Which numbers are divisible by 5? Tell how you decided.

    D. Which numbers are divisible by 6? Tell how you decided.

    E. Which numbers are divisible by 9? Tell how you decided.

    F. Which numbers are divisible by 10? Tell how you decided.

12. Estimate the measure (in degrees) of each of the following angles.

***Teacher Guide* - Page 2**

Name _____ Date _____

Part 2

Solve the following problems. You may use any of the tools that you usually use in class including a calculator.

13. Complete the following table. A flat ▱ is equal to 1.

Base-Ten Shorthand	Decimal	Fraction
▱▱ || ·····		$2\frac{25}{100}$
	1.6	
		$3\frac{4}{100}$
▱ ▱ ||| :·····		

14. Construct a quadrilateral ABCD using the following rules:

A. $\overleftrightarrow{AB}$ must be parallel to $\overleftrightarrow{DC}$

B. $\overleftrightarrow{AD}$ must be perpendicular to $\overleftrightarrow{DC}$

C. The measure of Angle A equals 90 degrees.

D. The measure of Angle B is less than 90 degrees.

15. Put the following fractions in order from smallest to largest.

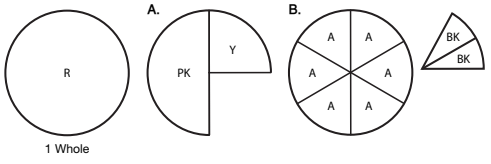
A. $\frac{1}{6}, \frac{1}{4}, \frac{1}{2}, \frac{1}{3}$

B. $\frac{4}{12}, \frac{1}{12}, \frac{13}{12}, \frac{14}{12}$

***Teacher Guide* - Page 3**

Name _____ Date _____

16. If a red circle is equal to 1 whole, name the following numbers each figure represents. You may use fraction circle pieces to help you.



_____ _____

17. Jackie ordered a special gift box of Chocos. There were 12 candies in the box.

A. $\frac{1}{3}$ of the candies in the box have cream filling.

B. $\frac{1}{6}$ of the candies in the box have caramel filling.

C. $\frac{3}{12}$ of the candies in the box are nutty clusters.

D. $\frac{1}{4}$ of the candies in the box have coconut filling.

How many of each kind are in Jackies's box? Complete the table. Write a multiplication number sentence.

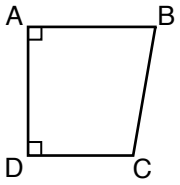
Kind of Candy	Number Sentence	Number of Candies in the Box
Cream Filling		
Caramel Filling		
Nutty Clusters		
Coconut Filling		

***Teacher Guide* - Page 4**

13.

Base-Ten Shorthand	Decimal	Fraction
▱▱ || ·····	2.25	$2\frac{25}{100}$
▱ ||||||	1.6	$1\frac{6}{10}$
▱▱▱ ····	3.04	$3\frac{4}{100}$
▱▱ ||| :·····	11.36	$11\frac{36}{100}$

14. One possible solution:



15. **A.** $\frac{1}{6}, \frac{1}{4}, \frac{1}{3}, \frac{1}{2}$

B. $\frac{1}{12}, \frac{4}{12}, \frac{13}{12}, \frac{14}{12}$

16. **A.** $\frac{3}{4}$

B. $\frac{7}{6}$ or $1\frac{1}{6}$ or $1\frac{2}{12}$

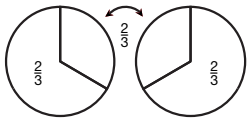
17.

Kind of Candy	Number Sentence	Number of Candies in the Box
Cream Filling	$\frac{1}{3}$ of 12 = 4 or $\frac{1}{3} \times 12 = \frac{12}{3} = 4$	4
Caramel Filling	$\frac{1}{6}$ of 12 = 2 or $\frac{1}{6} \times 12 = \frac{12}{6} = 2$	2
Nutty Clusters	$\frac{3}{12}$ of 12 = 3 or $\frac{3}{12} \times 12 = \frac{36}{12} = 3$	3
Coconut Filling	$\frac{1}{4}$ of 12 = 3 or $\frac{1}{4} \times 12 = \frac{12}{4} = 3$	3

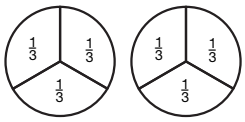
18.

	True	False
A. $3 \times \frac{2}{3} = 3 \times \frac{1}{2} \times 2$		✓
B. $6 \times \frac{1}{3} = 2$	✓	
C. $4 \times \frac{3}{8} = 2 \times 3$		✓
D. $4 \times \frac{3}{8} = \frac{3}{8} + \frac{3}{8} + \frac{3}{8} + \frac{3}{8}$	✓	
E. $4 \times \frac{3}{8} = \frac{12}{8}$	✓	
F. $4 \times \frac{3}{8} = \frac{12}{32}$		✓
G. $3 \times \frac{2}{3} = 6 \times \frac{1}{3}$	✓	

H. Possible response: $3 \times \frac{2}{3} = \frac{6}{3} = 2$ and $6 \times \frac{1}{3} = \frac{6}{3} = 2$.



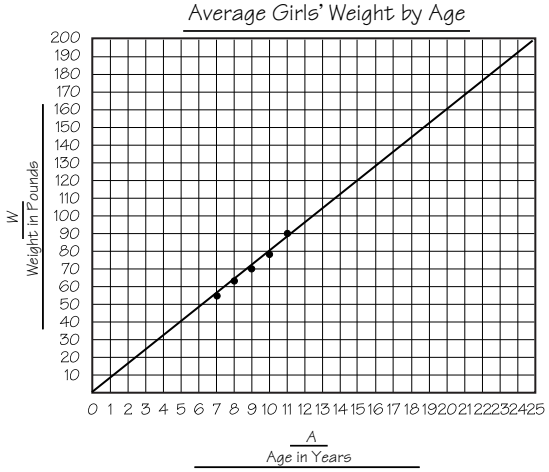
$3 \times \frac{2}{3} = \frac{6}{3}$



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

19. A. Possible response: The points slant up from left to right.

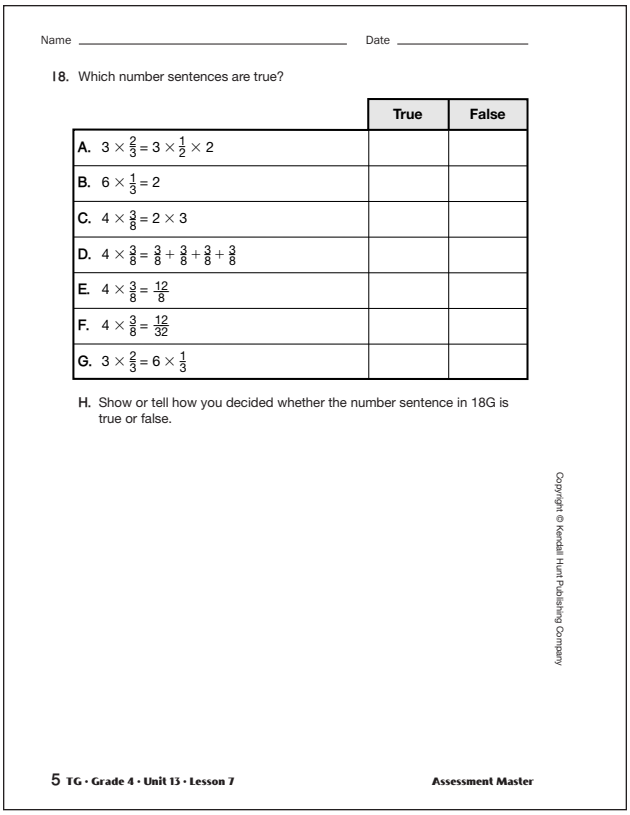
B.



C. Between 100 and 120 pounds (Estimates will vary.)

D. According to the graph, an average 23-year-old weighs between 180–190 pounds. Although a 23-year-old could weigh 180–190 pounds, this value is high for the average weight of a 23-year-old. Students should see that extrapolating this far beyond the last data point is unreliable.

E. According to the graph, an average 1-year-old weighs about 10 pounds. Students should see that extrapolating this far beyond the first data point is unreliable.



Name _____ Date _____

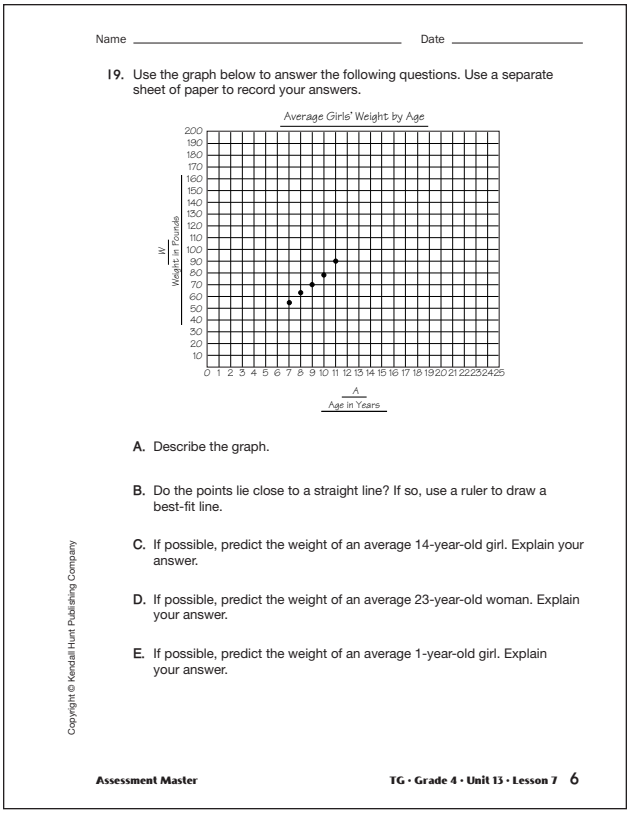
18. Which number sentences are true?

	True	False
A. $3 \times \frac{2}{3} = 3 \times \frac{1}{2} \times 2$		
B. $6 \times \frac{1}{3} = 2$		
C. $4 \times \frac{3}{8} = 2 \times 3$		
D. $4 \times \frac{3}{8} = \frac{3}{8} + \frac{3}{8} + \frac{3}{8} + \frac{3}{8}$		
E. $4 \times \frac{3}{8} = \frac{12}{8}$		
F. $4 \times \frac{3}{8} = \frac{12}{32}$		
G. $3 \times \frac{2}{3} = 6 \times \frac{1}{3}$		

H. Show or tell how you decided whether the number sentence in 18G is true or false.

5 TG • Grade 4 • Unit 13 • Lesson 7 Assessment Master

***Teacher Guide* - Page 5**



Name _____ Date _____

19. Use the graph below to answer the following questions. Use a separate sheet of paper to record your answers.

A. Describe the graph.

B. Do the points lie close to a straight line? If so, use a ruler to draw a best-fit line.

C. If possible, predict the weight of an average 14-year-old girl. Explain your answer.

D. If possible, predict the weight of an average 23-year-old woman. Explain your answer.

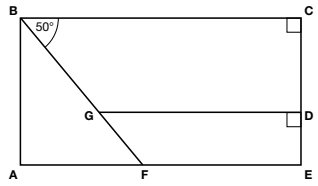
E. If possible, predict the weight of an average 1-year-old girl. Explain your answer.

Assessment Master TG • Grade 4 • Unit 13 • Lesson 7 6

***Teacher Guide* - Page 6**

Name _____ Date _____

20. Use the diagram below to answer Questions A–F below.



Find the measures of the following angles.

A. ∠ABF
B. ∠AFB
C. ∠CDG
D. ∠BGD
E. ∠DGF
F. ∠EFG
G. Show or tell how you found the answer for 20D.

***Teacher Guide* - Page 7**

Name _____ Date _____

21. Use the fraction circle pieces and the *Fraction Chart* to complete each table.

Multiply by $\frac{1}{3}$

A.

Input	Output
6	
9	
12	
15	

Multiply by $\frac{2}{3}$

B.

Input	Output
6	
9	
12	
15	

Multiply by $\frac{1}{5}$

C.

Input	Output
5	
10	
15	
20	

Multiply by $\frac{2}{5}$

D.

Input	Output
5	
10	
15	
20	

Multiply by $\frac{1}{4}$

E.

Input	Output
2	
4	
6	
8	
12	
16	

Multiply by $\frac{3}{4}$

F.

Input	Output
2	
4	
6	
8	
12	
16	

***Teacher Guide* - Page 8**

20. A. ∠ABF = 40°

B. ∠AFB = 50°

C. ∠CDG = 90°

D. ∠BGD = 130°

E. ∠DGF = 50°

F. ∠EFG = 130°

G. Possible response: if ∠CBG = 50° and ∠BCD = 90° that equals 140°; ∠CDG = 90° because $\overline{GD}$ is perpendicular to $\overline{CE}$; 140° + 90° = 230°, I know all 4 angles should sum to 360° so 360° – 230° = 130°.

21. A.

Input	Output
6	$\frac{6}{3} = 2$
9	$\frac{9}{3} = 3$
12	$\frac{12}{3} = 4$
15	$\frac{15}{3} = 5$

B.

Input	Output
6	$\frac{12}{3} = 4$
9	$\frac{18}{3} = 6$
12	$\frac{24}{3} = 8$
15	$\frac{30}{3} = 10$

C.

Input	Output
5	$\frac{5}{5} = 1$
10	$\frac{10}{5} = 2$
15	$\frac{15}{5} = 3$
20	$\frac{20}{5} = 4$

D.

Input	Output
5	$\frac{15}{5} = 3$
10	$\frac{30}{5} = 6$
15	$\frac{45}{5} = 9$
20	$\frac{60}{5} = 12$

E.

Input	Output
2	$\frac{2}{4} = \frac{1}{2}$
4	$\frac{4}{4} = 1$
6	$\frac{6}{4} = 1\frac{2}{4}$
8	$\frac{8}{4} = 2$
12	$\frac{12}{4} = 3$
16	$\frac{16}{4} = 4$

F.

Input	Output
2	$\frac{6}{4} = 1\frac{2}{4}$
4	$\frac{12}{4} = 3$
6	$\frac{18}{4} = 4\frac{2}{4}$
8	$\frac{24}{4} = 6$
12	$\frac{36}{4} = 9$
16	$\frac{48}{4} = 12$