

# Mathematics Grade 6 Unit 04: Proportionality: Representations and Applications 2012-2013

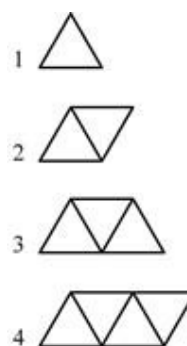


- 1** Large Texas oranges weigh  $\frac{1}{2}$  of a pound each. Which equation shows the relationship between the number of oranges,  $N$ , and the weight in pounds,  $P$ ?

Number of Oranges ( $N$ )	Weight of Oranges in pounds ( $P$ )
1	0.5
2	1.0
3	1.5
4	2.0

- A**  $N + 0.5 = P$   
**B**  $P + 0.5 = N$   
**C**  $N \times 0.5 = P$   
**D**  $P \times 0.5 = N$

- 2** Look at the triangle patterns below.



This table shows the perimeter, in units, for the pattern of triangles that are side by side.

Number of Triangles	Perimeter (in units)
<b>1</b>	<b>3</b>
<b>2</b>	<b>4</b>
<b>3</b>	<b>5</b>
<b>4</b>	<b>6</b>
<b>5</b>	<b>7</b>

Based on this table, how many triangles would be needed to have a perimeter of 24 units?

- F** 23 triangles  
**G** 22 triangles  
**H** 21 triangles  
**J** 20 triangles

**3** A recipe calls for 3 cups of flour and 2 cups of sugar. How many cups of flour would be needed if the amount of sugar was increased to 12 cups?

- A** 36 cups
- B** 24 cups
- C** 18 cups
- D** 8 cups

**4** Mr. Franco's records show that 44% of his students bring their own lunches to school. Which decimal represents the percent of students in Mr. Franco's class who do NOT bring their lunches to school?

- F** 5.6
- G** 5.06
- H** 0.56
- J** 0.056

---

**5** Kim's class has 16 boys and 8 girls. What fraction of the class is made up of boys?

- A**  $\frac{1}{4}$
- B**  $\frac{2}{3}$
- C**  $\frac{1}{2}$
- D**  $\frac{1}{3}$

- 6 A school reporter surveyed a sample of sixth grade girls about their favorite Friday night activities. The table shows the results.

<b>Activities</b>	<b>Number of Votes</b>
Movie	15
Eating Out	6
Slumber Party	5
Other	4

Based on the survey results, answer the following questions.

A. What ratio would represent the number of sixth grade girls surveyed who would choose a movie as their favorite Friday night activity?

B. If there are 300 sixth grade girls attending this middle school, use the ratio from part A to predict the number of girls who would choose a movie as their favorite Friday night activity.

C. Which two Friday night activities would the ratio three to two represent? Explain.

- 
- 7 Mr. Davis drives 508 miles in eight hours. At this rate, how many miles does he drive in six hours?

- A 101 miles
- B 254 miles
- C 340 miles
- D 381 miles

- 8 The Dallas Animal Shelter has many kinds of animals. One Saturday, the shelter had eight retrievers out of a total of 28 total dogs. The expected total dog population for the year is 490. Determine how many of the dogs they can expect will be retrievers.

				.		
0	0	0	0		0	0
1	1	1	1		1	1
2	2	2	2		2	2
3	3	3	3		3	3
4	4	4	4		4	4
5	5	5	5		5	5
6	6	6	6		6	6
7	7	7	7		7	7
8	8	8	8		8	8
9	9	9	9		9	9

- 9 Walter makes a cable payment of \$84 each month. Which table represents the relationship between  $m$ , the number of months, and  $c$ , the amount he pays for cable for that length of time?

**A**

Month ( $m$ )	Cable ( $c$ )
1	\$84
2	\$164
3	\$254

**B**

Month ( $m$ )	Cable ( $c$ )
2	\$164
4	\$326
6	\$648

**C**

Month ( $m$ )	Cable ( $c$ )
84	\$1
168	\$2
252	\$3

**D**

Month ( $m$ )	Cable ( $c$ )
3	\$252
6	\$504
9	\$756

- 10 In one hour, a seamstress can sew 52 yards of material. How many yards can she sew in 45 minutes?

- F** 39 yards  
**G** 45 yards  
**H** 52 yards  
**J** 69 yards

- 11** Maria's penny collection contains three Indian head pennies for every 36 Lincoln pennies. If Maria has 612 Lincoln head pennies, how many Indian head pennies does she have?
- A** 17 Indian head pennies
  - B** 51 Indian head pennies
  - C** 108 Indian head pennies
  - D** 204 Indian head pennies
- 12** A can of mixed nuts holds 16 ounces of cashews and 24 ounces of peanuts. What is the ratio of peanuts to cashews in this can of nuts?
- F** 1 : 2
  - G** 2 : 3
  - H** 3 : 2
  - J** 2 : 1

- 
- 13** A flower arrangement has seven carnations and 21 daffodils. What is the ratio of carnations to the total number of flowers in the arrangement?
- A** 1 to 2
  - B** 1 to 3
  - C** 1 to 4
  - D** 3 to 4

- 14** At a delicatessen there are 54 different types of meats and cheeses. If the ratio of cheese to meat is 4:5, how many types of cheese are available?

				.		
0	0	0	0		0	0
1	1	1	1		1	1
2	2	2	2		2	2
3	3	3	3		3	3
4	4	4	4		4	4
5	5	5	5		5	5
6	6	6	6		6	6
7	7	7	7		7	7
8	8	8	8		8	8
9	9	9	9		9	9



**15** For every 16 games the baseball team won, they lost three. Which ratio correctly compares the number of games lost to the number of games played?

**A**  $\frac{3}{19}$

**B**  $\frac{3}{16}$

**C**  $\frac{16}{3}$

**D**  $\frac{19}{3}$

**16** Frank typed four pages in 24 minutes in keyboarding class. Rosetta typed six pages in 30 minutes. Who typed more pages per minute, Frank or Rosetta? Explain your answer.

**17** In his lawn service business, Mr. Wicketts spends 36 hours per week mowing lawns and six hours per week trimming trees. What is the ratio of time Mr. Wicketts spends trimming trees to mowing lawns each week?

## Test Key

### Mathematics Grade 6 Unit 04: Proportionality: Representations and Applications 2012-2013

##	Item #	Correct Answer	Primary SE	Secondary SE	Obj/Cat
1	M063022677	C	6.4(A) [R]	None	STAAR: M2
2	M063022933	G	6.4(A) [R]	None	STAAR: M2
3	M061086658D	C	6.3(C) [R]	6.11(A) [P]	STAAR: M2
4	M061086646D	H	6.3(B) [S]	None	STAAR: M2
5	M061086644D	B	6.3(B) [S]	None	STAAR: M2
6	M063023157	A. 15:30 or 1:2; 15 to 30 or 1 to 2; $\frac{15}{30}$ or $\frac{1}{2}$ B. 150 sixth grade girls C. Eating Out : Other	6.3(C) [R]	6.13(B) [P]	STAAR: M2
7	M061086631D	D	6.2(C) [R]	6.11(D) [P]	STAAR: M1
8	M06025488CS	140	6.3(C) [R]	None	STAAR: M2
9	M061150057D	D	6.4(A) [R]	None	STAAR: M2
10	M063044902	F	6.3(A) [S]	None	STAAR: M2
11	M061086629D	B	6.2(C) [R]	None	STAAR: M1
12	M061086634D	H	6.3(A) [S]	None	STAAR: M2
13	M061086661D	C	6.3(A) [S]	None	STAAR: M2
14	M06025487CS	24	6.3(C) [R]	None	STAAR: M2
15	M061092909D	A	6.3(B) [S]	None	STAAR: M2
16	M061092911D	Rosetta. Review proportions to solve this problem.	6.3(C) [R]	6.12(A) [P]	STAAR: M2
17	M061086641D	1 : 6	6.3(A) [S]	None	STAAR: M2