Unit 1

SOL 6.1

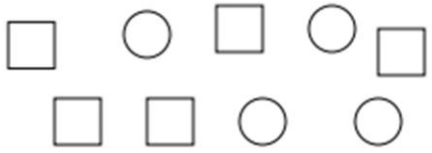
The student will represent relationships between quantities using ratios, and will use appropriate notations, such as $\frac{a}{b}$, a to b, and a:b.

HINTS & NOTES

- ✓ Make sure that you write the ratio in the order that is asked.
- ✓ Simplify all ratios.
- ✓ Ratios can be written in several different ways: $\frac{a}{b}$, ***a* to *b*, *a*:*b*.**

PRACTICE

1. What is the ratio of squares to all shapes?



A 4:5
B 5:4
C 5:9
D 9:5

2. Tyriq owns a guitar store with 150 guitars in stock. He has 90 electric guitars and the rest are acoustic. What is the ratio of acoustic to electric guitars?

A 2 to 3
B 3 to 2
C 3 to 5
D 2 to 5

3. There are 20 green disks and 100 purple disks in a bag. What is the ratio of purple disks to green disks?

A $\frac{5}{1}$
B. $\frac{1}{5}$
C. $\frac{6}{1}$
D. $\frac{4}{5}$

4. There are 25 girls and 35 boys in the concert band. What is the ratio of boys to all students in the band?

A. $\frac{25}{35} = \frac{5}{7}$
B. $\frac{35}{25} = \frac{7}{5}$
C. $\frac{25}{60} = \frac{5}{12}$
D. $\frac{35}{60} = \frac{7}{12}$

5.

What is the ratio of the number of gray circles to black circles.

A. 2 to 5
B. 5 to 4
C. 2 to 1
D. 4 to 5

6. A bag contains red apples and yellow apples. The ratio of red apples to yellow apples in the bag is 9 to 4. Which of these statements could be true?

A. There are exactly 6 red apples and 1 yellow apple in the bag.
B. There are exactly 18 red apples and 8 yellow apples in the bag.
C. There are exactly 4 red apples and 9 yellow apples in the bag.
D. There are exactly 9 red apples and 13 yellow apples in the bag.

SOL 6.12

The student will a) represent a proportional relationship between two quantities, including those arising from practical situations;

b) determine the unit rate of a proportional relationship and use it to find a missing value in a ratio table;

c) determine whether a proportional relationship exists between two quantities; and

d) make connections between and among representations of a proportional relationship between two quantities

HINTS & NOTES

Proportional relationships involve equivalent ratios. In the table below, $\frac{1\ item}{\$2.00} = \frac{2\ items}{\$4.00}$

# of items (*x*)	1	2	5	10
Cost in $ (*y*)	$2.00	$4.00	$10.00	$20.00

- The unit rate in the table above shows the cost for ONE item. ($2.00/1 item) This rate is repeated throughout the table.
- You can graph relationships using (x,y) coordinates.
- The graph of a proportional relationship goes through the point (0,0), the origin.

PRACTICE

1. Larry charges a customer a fee of $15 each week. Which table has values that represent this situation?

A

Number of Weeks	Total Amount of Charges
1	$15
3	$45

B

Number of Weeks	Total Amount of Charges
1	$55
3	$165

C

Number of Weeks	Total Amount of Charges
1	$55
3	$135

D

Number of Weeks	Total Amount of Charges
1	$15
3	$95

2. Sara earns $2.50 for each cupcake she sells. What is the missing value in the table?

Cupcakes	2	5	9
Money ($)	$5.00	$12.50	_____

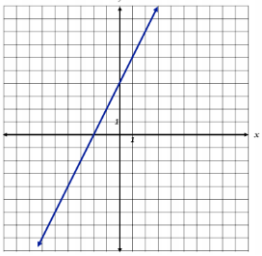
A $10.00

B $15.00

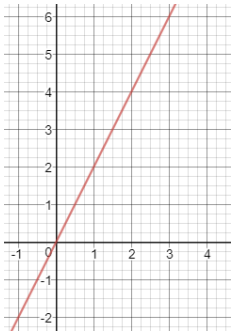
C $22.50

D $27.50

3. Does this graph show a proportional relationship? (y/n)



4. Which table contains values shown on the graph?



A

X	1	2
y	2	3

B

X	2	4
y	1	2

C

X	0	2
y	0	4

D

X	1	2
y	1	2