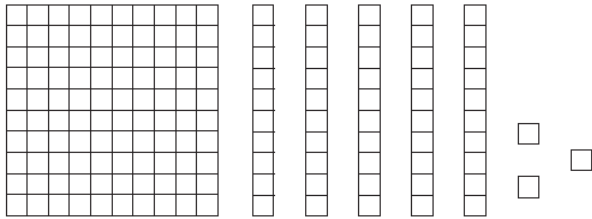Grade 3 Math Authentic OAT Questions – 2005, 2006 & 2007 Administration; Practice & Half-Length Test Questions

Number, Number Sense and Operations Standard

1. Which number is shown by the blocks?

○ A. 153
○ B. 351
○ C. 513

2. Alicia has 90 stickers. She gives all of the stickers to 10 of her friends. Each friend gets the same number of stickers. Which number sentence shows how many stickers each friend gets?

○ A. $90 + 10 = 100$
○ B. $90 \times 10 = 900$
○ C. $90 \div 10 = 9$

3. Callie has 21 stuffed animals. Her sister has 24 stuffed animals. Which pair of numbers could best be used to estimate the total number of stuffed animals?

○ A. 10 and 20
○ B. 20 and 20
○ C. 30 and 30

4. The school store sells pencils, pens and erasers. The picture shows the cost of each of these items.

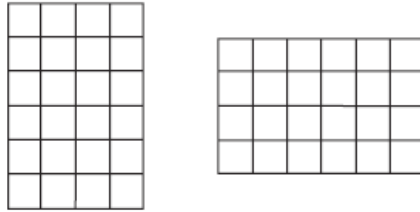| Pencils	Pens	Erasers
10¢	15¢	25¢
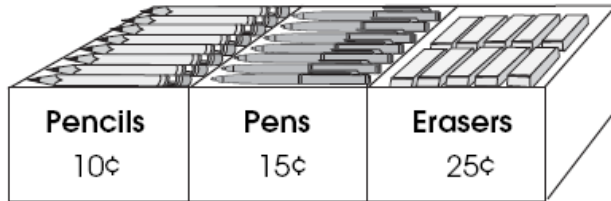
Becky bought 2 pencils, 5 pens and 2 erasers. How much

money did Becky spend? _____

Show or explain your answer using pictures, words or numbers.

The next week Becky spent 85¢ in the store. Use the table below to show how she could spend exactly 85¢.

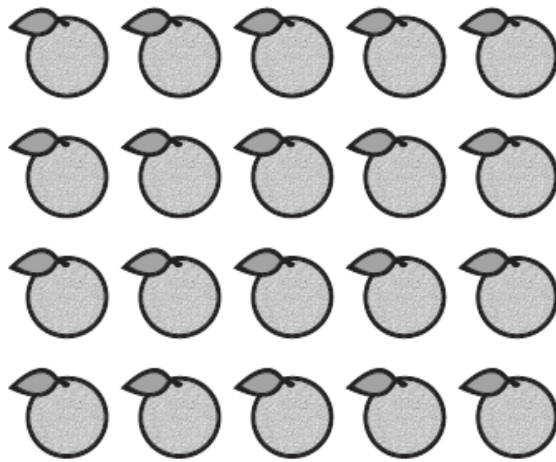| Item	Number	Total Cost
Pencils		
Pens		
Erasers		
		85¢

5. The rectangular arrays show a number fact.

Which number fact do they show?

- A. $4 \times 6 = 6 \times 4$
- B. $4 + 6 = 6 + 4$
- C. $4 \div 6 = 6 \div 4$

6. Find the difference.   135 – 22

- A. 113
- B. 132
- C. 157

7. Six children share 20 oranges. Each child gets the same number of oranges.

How many oranges will each child get? _____

How many oranges will be left over? _____

Show or explain your answers using pictures, words or numbers.

8. What coins could you receive for change if you use a $1.00 bill to pay for something that costs $0.59?

○ A. [three dimes and a penny]

○ B. [four dimes and a penny]

○ C. [five nickels and a penny]

9. Martin has three boxes of erasers. Each box holds 12 erasers. How many erasers does he have in all?

○ A. 4

○ B. 15

○ C. 36

10. Mrs. Porter's class collected 325 box tops. Mr. Smith's class collected 234. How many box tops were collected?
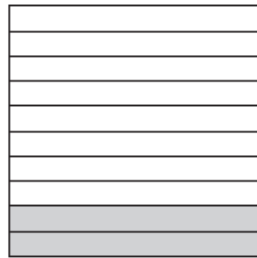
○ A. 559

○ B. 569

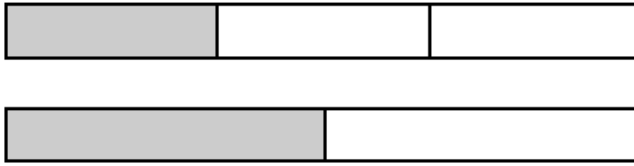○ C. 669

11. What fraction of these stars is shaded?

- ○ A. $\frac{1}{3}$
- ○ B. $\frac{2}{5}$
- ○ C. $\frac{3}{5}$

12. Which decimal is shown by the shaded part of the figure?

- ○ A. 0.2
- ○ B. 0.3
- ○ C. 0.8

13. Look at the picture below.

Which is true?

○ A. $\frac{1}{3}$ is less than $\frac{1}{2}$

○ B. $\frac{1}{3}$ is greater than $\frac{1}{2}$

○ C. $\frac{1}{3}$ is equal to $\frac{1}{2}$

14. Is 300 a reasonable estimate for 726 – 192? _____

Show or explain why or why not.

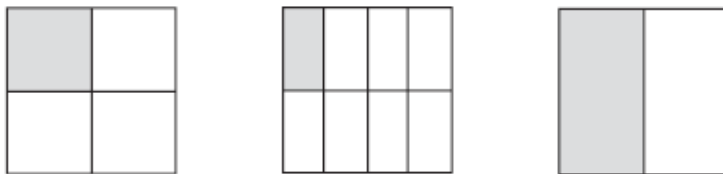15. Which is another way of writing 6 + 6 + 6 + 6 + 6?

    ○ A. 5×6

    ○ B. 5×5

    ○ C. 6×4

16. Carole has 7 marbles. Ezra gives her 3 marbles. Tonya gave Carole 2 more marbles. The total number of marbles that Carole has can be shown by (7 + 3) + 2.

This is the same as:

    ○ A. 7 + (3 + 2)

    ○ B. (7 + 3) + (7 + 2)

    ○ C. (7 + 3) + (3 + 2)

Directions: Use the fraction models to answer question 2.

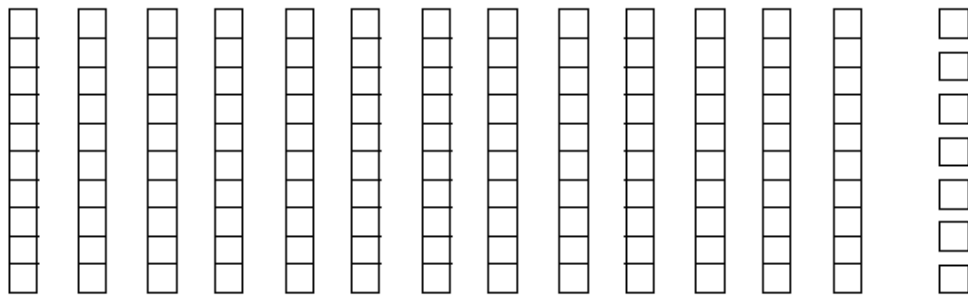17. Which set of fractions is in order from smallest to largest?

    ○ A. $\frac{1}{8}, \frac{1}{4}, \frac{1}{2}$

    ○ B. $\frac{1}{2}, \frac{1}{8}, \frac{1}{4}$

    ○ C. $\frac{1}{4}, \frac{1}{8}, \frac{1}{2}$

18. Which is a reasonable estimate for the sum of 312 and 105?

  O A. 400

  O B. 500

  O C. 600

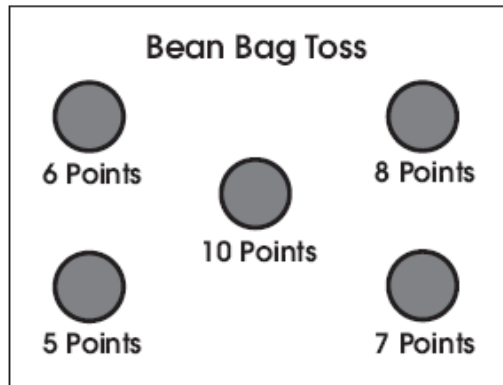19. Which number is shown by the blocks?

  O A. 20

  O B. 83

  O C. 137

20. Mike bought four movie tickets. Each ticket cost $7. Which number sentence shows how much money Mike spent?

  O A. 4 + $7 = $11

  O B. 4 × $7 = $28

  O C. $7 – 4 = $3

21. In the Bean Bag Toss game a player can score the points shown.

Bean Bag Toss

6 Points

8 Points

10 Points

5 Points

7 Points

Max tossed three bean bags in the same hole and two bean bags in a second hole.

What is the highest score that Max could receive for these

five tosses?_____

Show how you found your answer using pictures, words or numbers.

22. Five children share 27 crayons. Each child gets the same number of crayons.

How many crayons will each child get? _____

How many crayons will be left over? _____

Show or explain your answer using pictures, words or numbers.

23. Which has a product of 28?

○ A. 5×8

○ B. 6×6

○ C. 7×4

24. This menu shows the prices at a Snack Bar.

Menu	
Hot Dog $2	Drink $1
Hamburger $3	Medium Fries $1
Cheeseburger $4	Large Fries $2

How much money will Lisa need to buy a cheeseburger, a

drink and large fries? _____

Show how you got your answer using pictures, words or numbers.

25. Jack had 10 pencils. He sharpened four of his pencils. What fraction of the pencils did he sharpen?
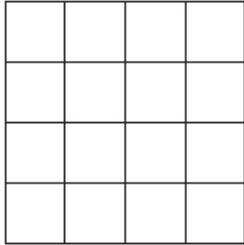
○ A. $\frac{4}{14}$

○ B. $\frac{4}{10}$

○ C. $\frac{4}{6}$

Measurement Standard
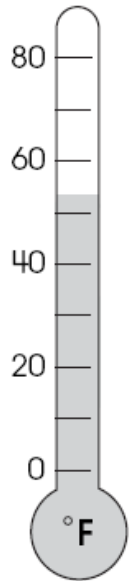
1. What is the area of this square?

    ○ A. 12 square units

    ○ B. 16 square units

    ○ C. 22 square units

2. Ling leaves for a trip on July 12th.

July						
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

He will return two weeks later. What date will he return?

○ A. July 14

○ B. July 19

○ C. July 26

3. What temperature does this thermometer show?

80 —
60 —
40 —
20 —
0 —
°F

○ A. 50°F
○ B. 53°F
○ C. 59°F

4. About how much does a card weigh?

○ A. 2 ounces
○ B. 2 pounds
○ C. 2 inches

5. Which object is about 10 feet high?

    ○ A. a desk

    ○ B. a classroom wall

    ○ C. a mountain

6. The two clocks show when soccer practice starts and when it ends.

Practice Starts   **Practice Ends**

How long was practice?

    ○ A. 1 hour 5 minutes

    ○ B. 1 hour 15 minutes

    ○ C. 1 hour 20 minutes

7. When would you use liters?

    ○ A. to find the weight of a book

   ○ B. to find the length of a pencil

    ○ C. to find the volume of a bottle

8.). Use your inch ruler to measure each side of this rectangle.
        Write the length of each side of the rectangle on the blank
        lines.

_____ inches

_____ inches

_____ inches

_____ inches

9. Which unit is best used for measuring the amount of water in a
    swimming pool?

    O A. ounce
    O B. foot
    O C. gallon

10. About how long is a pencil?

    O A. 6 inches
    O B. 6 feet
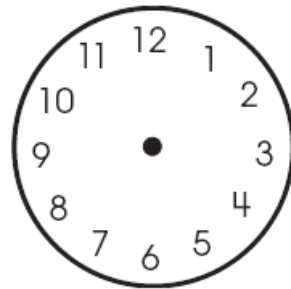   O C. 6 yards

11. Rachel lines up beans on two sides of a rectangle.
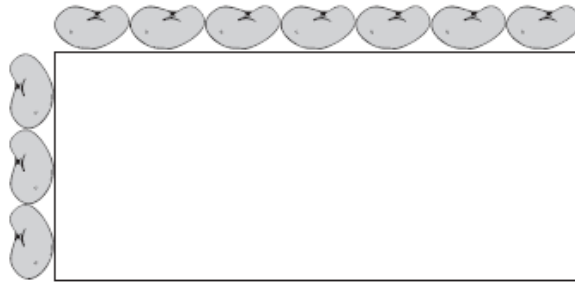
How many beans will Rachel need to go all the way around the rectangle?

- ○ A. 7
- ○ B. 13
- ○ C. 20

12. Melissa left for soccer practice at 3:30 p.m. She returned home two hours later. Write the time she returned home.

_____

Show the return time on the clock.

13.   What time does this clock show?
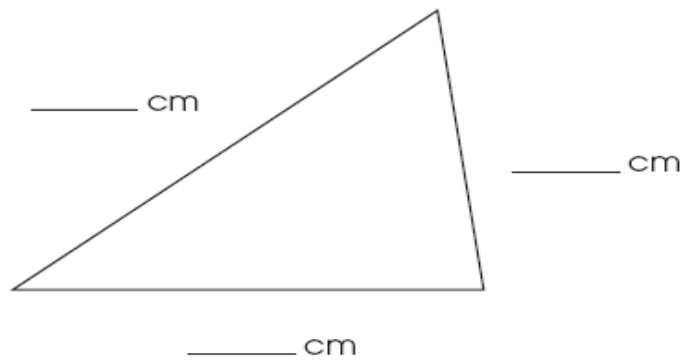

   ○ A.   2:25

   ○ B.   3:20

   ○ C.   5:10

14.   Use your centimeter ruler to measure the length of each side
   of this triangle. Write the length of each side on the blank lines.

      _____ cm

      _____ cm

      _____ cm

15. Which item would most likely be weighed in grams?

○ A.

○ B.

○ C.

Data Analysis and Probability Standard

1. Johnny asked his classmates to name their favorite food. The mode of this data was pizza. Which statement tells what the mode means?

   O A. The greatest number of students said pizza.

   O B. The least number of students said pizza.

   O C. None of the students said pizza.

2. Monica pulls one block from each bag. Which bag is the least likely to have a white block pulled from it?

   O A.

   O B.

   O C.
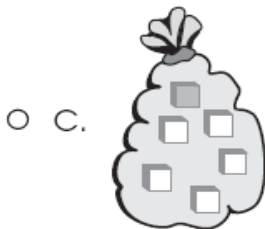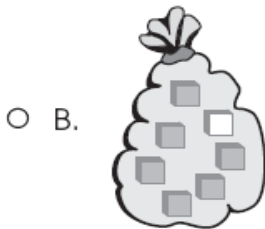
3. José has a red shirt, a blue shirt and a white shirt. He also has an orange hat and a green hat.

> Use words or pictures to show all the different ways José can wear one shirt and one hat.

4. How many goldfish are there?

Aquarium Fish

Type	Large Fish	Small Fish
Guppies	12	27
Goldfish	12	6

○ A. 12

○ B. 18

○ C. 24

5.   This table shows the number of students in four classes.

Students in Classes

Teacher	Number of Students
Mrs. Gainey	18
Mr. Perez	20
Mrs. Brady	18
Mrs. Hicks	17

Directions:

Use the grid on the next page to create a bar graph to show the data in the table.

Be sure to show a scale for your graph.

Students in Classes

Mrs. Gainey	Mr. Perez	Mrs. Brady	Mrs. Hicks

Number of Students

Teachers

Write two different facts about the information in the graph.

a. _____

_____

b. _____

_____

6. Which spinner has the best chance of landing on a shaded space?

O A.

O B.

O C.
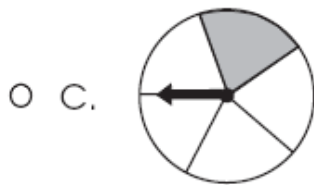
7. Nine students gathered data about their fathers' shoe sizes.

Shoe size: 8,　8,　8,　9,　9,　9,　9,　10,　10

What is the mode for the data they collected?

O A. size 8
O B. size 9
O C. size 10

8.

The list shows the ages of all the players on Miguel's baseball team.

| Players' Ages |
| --- |
| 7, 8, 8, 9, 9, 9, 10, 10, 10, 10, 11 |

Which line plot shows this information correctly?

O A.

```
                        X
              X         X
         X    X    X
    X    X    X    X         X
  --+----+----+----+----+---->
    7    8    9   10   11
         Players' Ages
```

O B.

```
    X    X    X    X    X
  --+----+----+----+----+---->
    7    8    9   10   11
         Players' Ages
```

O C.

```
                   X
              X    X
         X    X    X    X
    X    X    X    X         X
  --+----+----+----+----+---->
    7    8    9   10   11
         Players' Ages
```
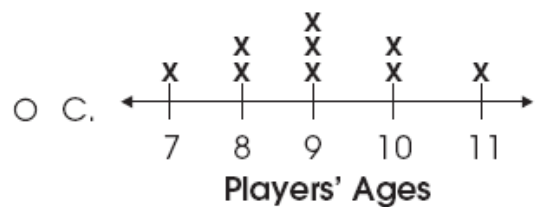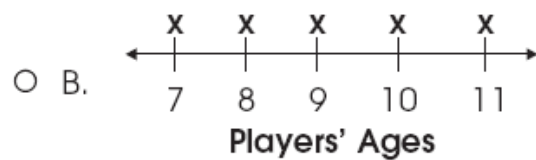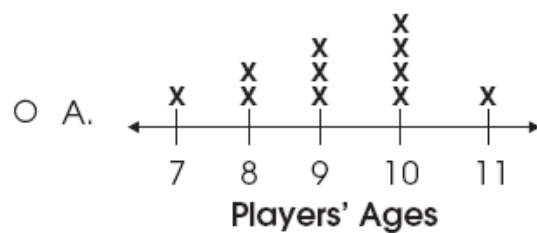
9. The chart below shows the kinds of pets owned by students in Mr. Grady's class.

Kind of Pets

Pets	Number of Students
Dog	ЖЖ II
Cat	ЖЖ IIIII
Bird	ЖЖ
Fish	III

Which graph shows these data?

Kind of Pets

O A.

Kind of Pets

O B.

Kind of Pets

O C.
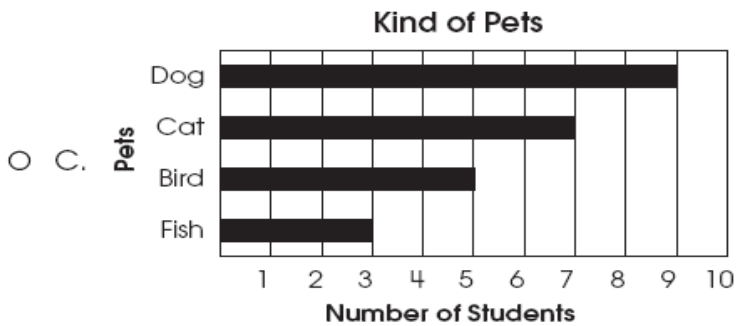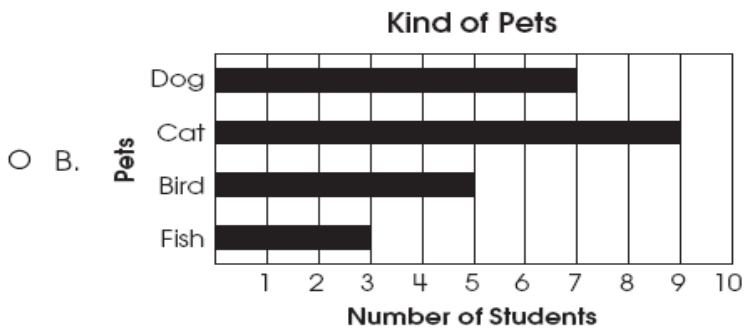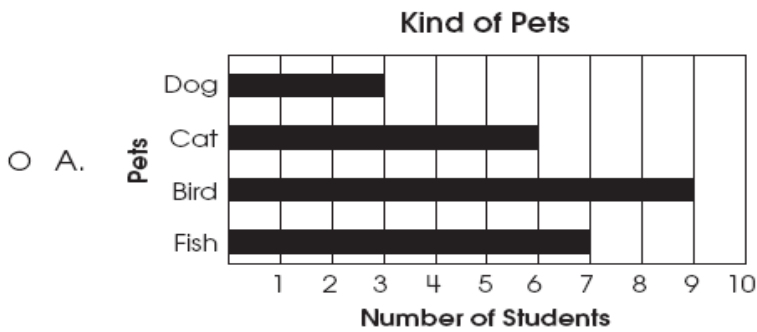
10. The school store had fancy pencils for sale as shown in this table.

Type of Pencil	Number of Pencils
Striped	12
Foil	16
Neon	10
Dots	20

Make a picture graph showing the number of each type of pencil. Let each $\bigcap$ = 4 pencils.

School Store Pencils

Striped	
Foil	
Neon	
Dots	

Each $\bigcap$ = 4 Pencils

11. The graph shows the favorite flavors of ice cream for Stephanie's class.

Favorite Ice Cream
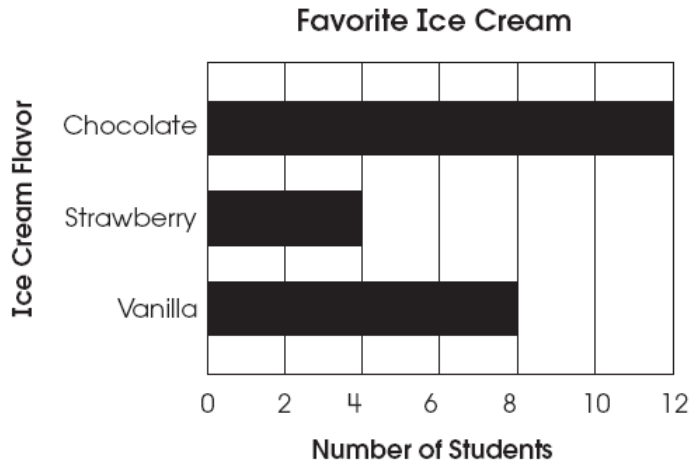
Which flavor is the mode of the data?

O A. Chocolate

O B. Strawberry

O C. Vanilla

12. Use the data in the chart.

Playground Activity

Activity	Number of Children
Slides	ⵏⵀⵜ ⵏⵀⵜ I
Swings	ⵏⵀⵜ ⵏⵀⵜ ⵏⵀⵜ III
Climbing Bars	ⵏⵀⵜ ⵏⵀⵜ
Ball Games	ⵏⵀⵜ ⵏⵀⵜ ⵏⵀⵜ

How many more children picked the swings than the slides as a playground activity?

O A. 5

O B. 7

O C. 8

13. Steve has the three groups of objects shown below.
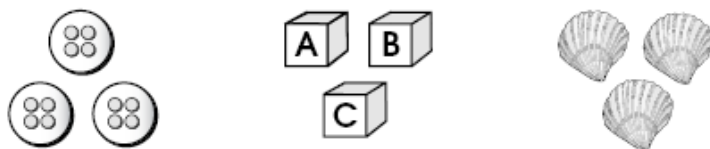
He picks one object from each group. Which is one possible way Steve could have picked the three objects?

O A.

O B.

O C.

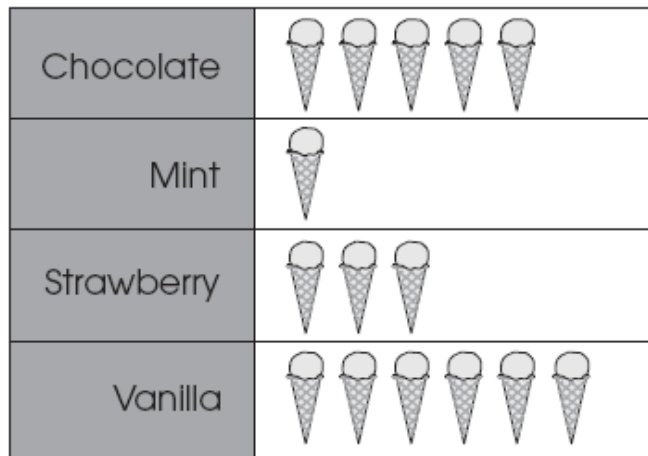14. Morgan spins both spinners shown.
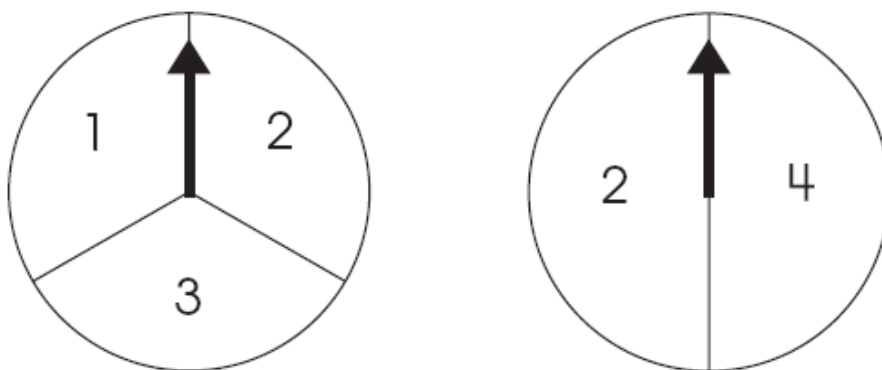
He adds the two numbers on which the spinners land.

How likely is it that Morgan's sum will be an odd number?

O A. possible but not certain

O B. impossible

O C. certain

15. Mrs. Jones' students made a picture graph of their favorite ic
cream cones.

Favorite Ice Cream Cones
in Mrs. Jones' Class

Chocolate	🍦🍦🍦🍦🍦
Mint	🍦
Strawberry	🍦🍦🍦
Vanilla	🍦🍦🍦🍦🍦🍦

Each 🍦 = 3 Students

How many students chose vanilla ice cream cones as
their favorite?

○ A. 3

○ B. 6

○ C. 18

Patterns, Functions, and Algebra Standard

1. It takes 38 stickers to fill a page. Charlene has 14 stickers. Which number sentence shows how many more stickers she needs to fill the page?

    ○ A. $\triangle{?} + 8 = 14$

    ○ B. $14 + \triangle{?} = 38$

    ○ C. $14 + 38 = \triangle{?}$

2. Find the missing number in the pattern.

    750, 775, 800, __?__, 850, 875

    ○ A. 725
    ○ B. 825
    ○ C. 900

3. Write the missing numbers to continue this pattern.

    8, 10, 14, 20,_____,_____

    Describe the rule for this pattern.

    _____

4. Marco buys packages of marbles. Each package has 2 red marbles. Which table shows the total number of red marbles Marco will get in one to four packages?

○ A.

Number of Packages	Total Number of Red Marbles
1	2
2	3
3	4
4	5

○ B.

Number of Packages	Total Number of Red Marbles
1	2
2	4
3	6
4	8

○ C.

Number of Packages	Total Number of Red Marbles
1	3
2	6
3	9
4	12

5. Which describes the rule for this pattern?

2, 6, 18, 54

○ A. multiply by 3
○ B. multiply by 4
○ C. multiply by 6

6. Which is a rule for the pattern below?
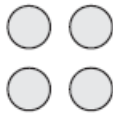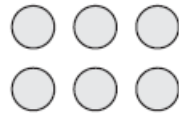
Figure 1   Figure 2   Figure 3

○ A. Take away two circles.
○ B. Add two circles.
○ C. Add four circles.

7. Which number makes this number sentence true?

$\boxed{?} + 3 < 15$

○ A. 5
○ B. 12
○ C. 18

8. Ricky earned $50 helping his neighbors. He spent $4 each week for snacks from the money he earned.

How much money did Ricky have left after five weeks?

_____

Use pictures, words or numbers to show how you found the amount of money Ricky had left after five weeks.

9. Sam and his mom put pennies into his bank and wrote the amount in this table.

Complete the table by continuing the pattern.

Money Saved

Sam	Mom
5¢	10¢
6¢	12¢
7¢	14¢
8¢	
9¢	
10¢	
11¢	

Describe the rule for this pattern.

_____

_____

_____

_____

10. A tomato plant is 7 inches tall. It grows 2 inches each week. How tall will the tomato plant be at the end of 3 weeks?

   O A.   9 inches

   O B.   10 inches

   O C.   13 inches

11. André made this pattern of figures with tiles.
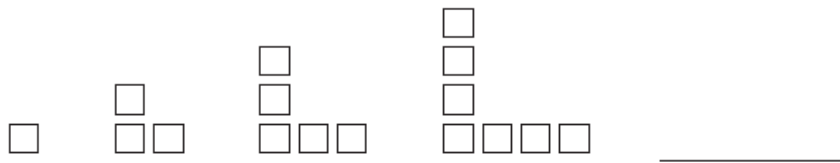
How many tiles would be in the next figure?

○ A. 8

○ B. 9

○ C. 10

12. Which number makes this statement true?

$$\triangle_? - 8 = 13$$

○ A. 5

○ B. 21

○ C. 84

13. Monica had 18 books. She shared some books with a friend and had 12 books left.

Which number sentence could be used to find the number of books Monica shared?

○ A. $18 - n = 12$

○ B. $12 - 18 = n$

○ C. $18 + 12 = n$

14. Which number makes this number sentence true?

$$\triangle{?} - 9 > 4$$

○ A. 12

○ B. 13

○ C. 16

15. What is the rule for this input-output table?

Input	Output
3	12
5	20
8	32

○ A. Multiply by 4.

○ B. Multiply by 5.

○ C. Multiply by 6.

16.

Write the missing numbers to continue this pattern.

15, 17, 19, 21, _____, _____

Describe the rule for this pattern.

_____

17. Donte grew 12 bean plants. Katie grew 17 bean plants. Which number sentence shows how to find the total number of plants they grew?

○ A.   12 + 17 = ⬚?

○ B.   ⬚? − 17 = 12

○ C.   17 + 17 = ⬚?

18. Which number makes this number sentence true?

$$14 + \triangle{?} = 21$$

○ A. 7
○ B. 14
○ C. 35

19. Laura baked 36 cookies. Her brother Sam ate n cookies.

Which expression represents the number of cookies Laura has left?

○ A. $n - 36$

○ B. $36 - n$

○ C. $36 \div n$

20. What number comes next in this pattern?

$$30, \quad 45, \quad 60, \quad 75, \quad \boxed{?}$$

Describe the rule.

_____

_____

21. A pattern is shown.
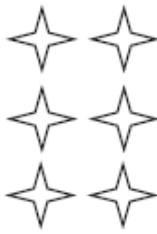
| Figure 1 | Figure 2 | Figure 3 |

How many stars will Figure 4 have?

○ A. 4

○ B. 9

○ C. 12

22. A table is shown.

Input	Output
10	12
8	10
5	7
3	5

Which rule was used to find the output for each input?

○ A. add 2 to input

○ B. multiply input by 2

○ C. subtract 2 from input

Geometry and Spatial Sense Standard

1. Draw two lines of symmetry for each shape. You may use your ruler.
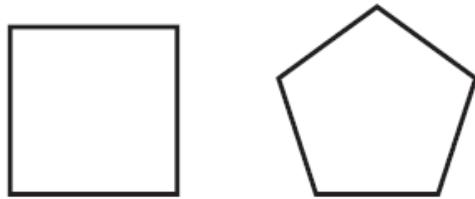
2. Two groups of shapes are shown below.
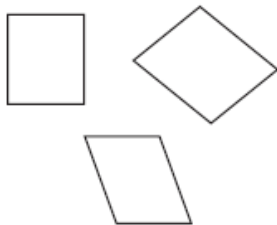
    Group 1   **Group 2**
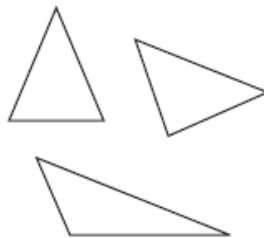
    Which shape belongs in Group 2?

    O A.

    O B.

    O C.
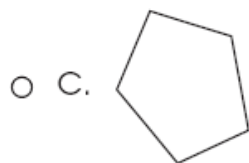
3. Which picture shows a right angle?

O A.

O B.

O C.

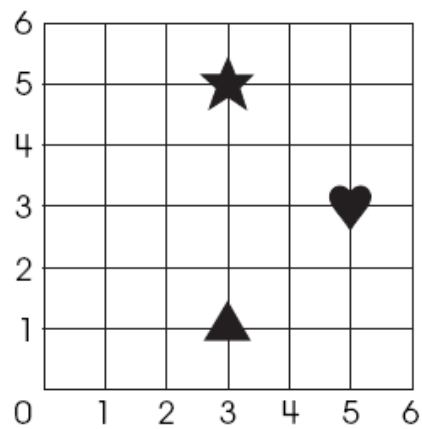4. John placed this can on a piece of paper. He traced around the bottom of the can.

What shape did he draw?

O A. triangle

O B. rectangle
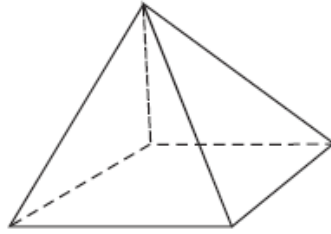
O C. circle

5. Which shape is three-dimensional?

○ A. [square]

○ B. [triangle]
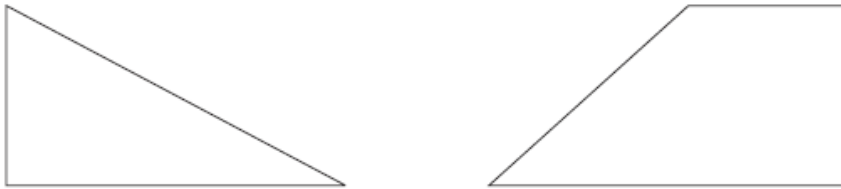
○ C. [cube]
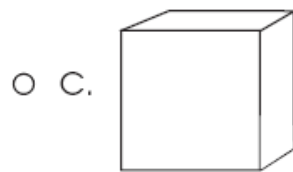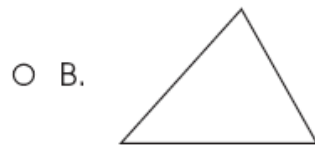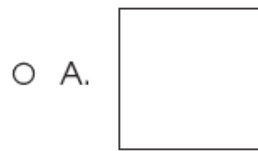
6. What is the location of the star on the grid?

○ A. (3, 1)
○ B. (3, 5)
○ C. (5, 3)

7. How many faces does this solid have?

  ○ A. 4

  ○ B. 5

  ○ C. 6

8. In which way are these two shapes alike?

  ○ A. Both seem to have at least one right angle.

  ○ B. Both have all sides of equal length.

  ○ C. Both have four vertices.

9.

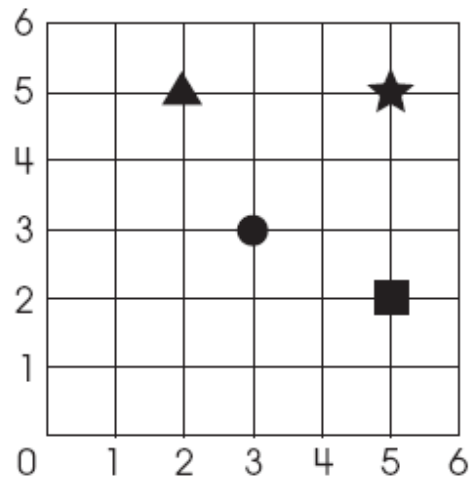Which angle is greater than a right angle?

○ A.

○ B.

○ C.

10.   Complete the table below by writing the number of sides and angles for each figure.

Figure		
Number of Sides		
Number of Angles		

11. Which leaf has a line of symmetry?
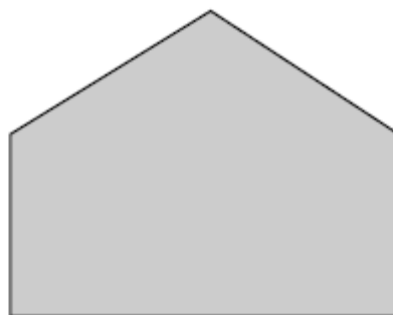
○ A.

○ B.

○ C.

12. Which shape is located at the point (5, 2) on the grid?

O A.   star

O B.   square

O C.   triangle
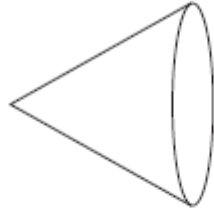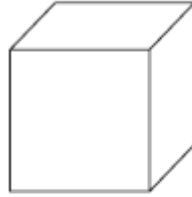
13. How many right angles are in this shape?

O A. 1
O B. 2
O C. 3

15. Parker has the 3 objects shown.

Cone   Cube   Cylinder

He chooses one object and describes it as having only 1 vertex and only 1 flat face.

Which object did Parker choose?

O   A.   cone
O   B.   cube
O   C.   cylinder

16. What is the shape of these objects?

O   A.   cone
O   B.   cylinder
O   C.   sphere

15. Amy, Mia and Sam made angles with two pencils.

Amy

Mia

Sam

Who made the angle with the largest measure?

O A. Amy

O B. Mia

O C. Sam