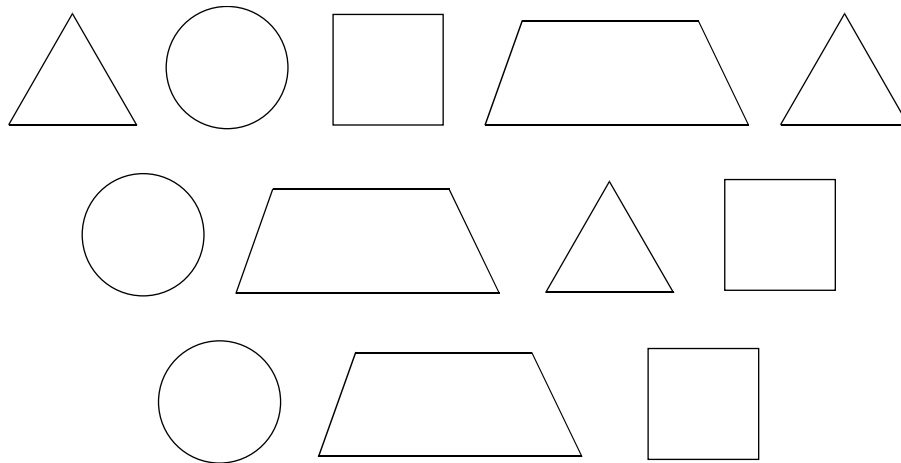


1. What percent of these shapes are triangles?

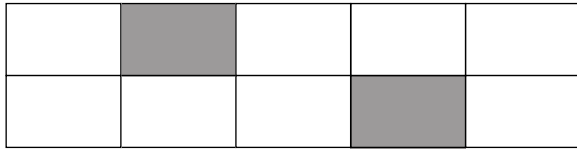


- A 0.25%
- B 3%
- C 12%
- D 25%

2. Which of the following shows 60% of the squares shaded?

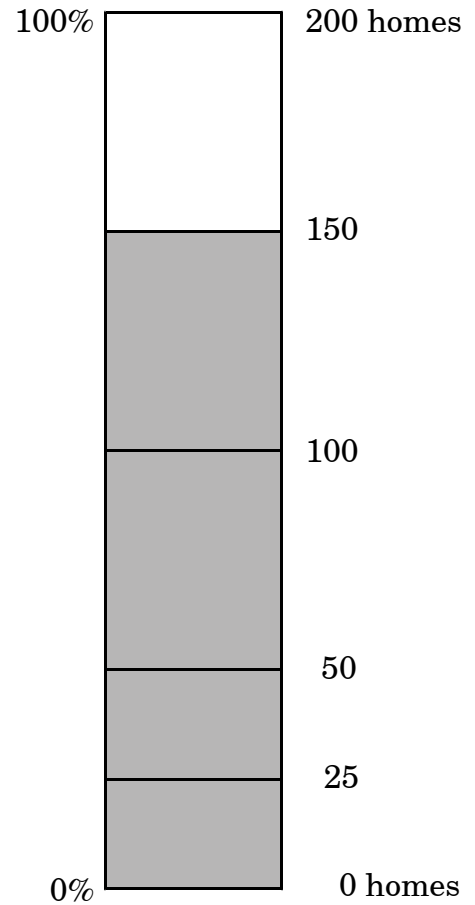
- A
- B
- C
- D

3. What percent of the large rectangle below is shaded?



- A 2%
- B 4%
- C 20%
- D 25%

4. Recycling club members plan to collect glass, aluminum, and paper from 200 homes in their neighborhood. By 2:00 p.m., the members had collected material from 150 homes.



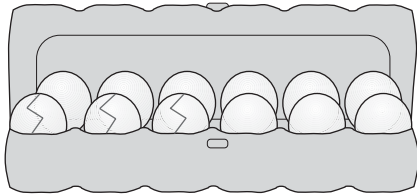
What percent of the homes had materials collected from them?

- A 75%
- B 50%
- C 25%
- D 0%

5. Brooke was the high scorer on her basketball team, making 15 baskets out of 25 shots attempted. What was her percent of success in shooting basketballs?

A 10%  
B 40%  
C 50%  
D 60%

6. If one-fourth of the eggs in the carton are cracked, what percent of the dozen are cracked?



A  $66\frac{2}{3}\%$   
B  $33\frac{1}{3}\%$   
C 30%  
D 25%

7. Of the 700 pairs of shoes in a shoe store, 140 pairs are sandals. What percentage of the pairs of shoes are sandals?

A 14%  
B 15%  
C 20%  
D 70%

8. Jon has  $\frac{3}{5}$  of a dollar, Pasha has \$0.65, Marie has  $\frac{7}{10}$  of a dollar, and Karen has \$0.62. Who has the **smallest** amount of money?

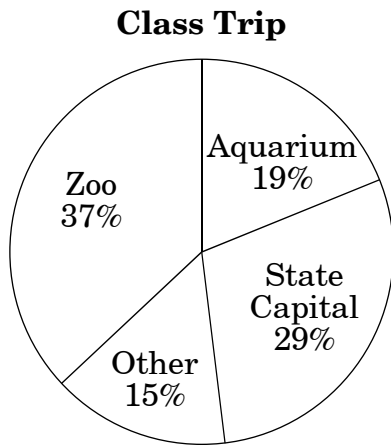
A Jon  
B Pasha  
C Marie  
D Karen

9. On a tree farm, 15% of the trees planted are pine,  $\frac{2}{5}$  are oak,  $\frac{1}{3}$  are maple, and  $\frac{1}{5}$  are fruit trees. Of these four types of trees, which type has been planted **most**?

A pine  
B oak  
C maple  
D fruit trees

10. Jackie, Morgan, Kyle, and Chung ran the 100-meter dash. Jackie finished in 17.6 sec., Morgan finished in 17.06 sec., Kyle finished in 17.66 sec., and Chung finished in 17.066 sec. Which of them finished in the **least** amount of time?
- A Jackie
- B Morgan
- C Kyle
- D Chung
11. Andy has a rope 0.9 m long. Sherry has a rope one and a half times as long as Andy's. How long is Sherry's rope?
- A 0.45 m
- B 1.35 m
- C 1.80 m
- D 2.25 m
12. Tina had  $2\frac{3}{8}$  pizzas. She kept  $1\frac{3}{4}$  pizzas for her family and gave the rest to Yolanda. How much pizza did Yolanda get?
- A  $\frac{1}{4}$  of a pizza
- B  $\frac{5}{8}$  of a pizza
- C  $1\frac{3}{4}$  pizzas
- D  $1\frac{5}{8}$  pizzas
13. The students in a wood working class were building birdhouses. It takes four pieces of wood (each piece  $\frac{3}{4}$  of a foot long) to build a birdhouse. At **most**, how many birdhouses can be made from 4 feet of wood?
- A 1
- B 3
- C 4
- D 5

14. To determine where the sixth-grade class will go for their class trip, the teachers surveyed all 500 of their students.



How many students preferred the Aquarium?

- A about 100 students
- B about 150 students
- C about 1,500 students
- D about 10,000 students
15. Latonya needs to purchase 5 notebooks at \$1.99 each and 3 pens at \$0.89 each. **About** how much will she spend?
- A \$15.00
- B \$13.00
- C \$11.00
- D \$9.00

16. The middle school softball team won  $\frac{4}{5}$  of its games this season. If the team only lost 4 games, how many games did it play?

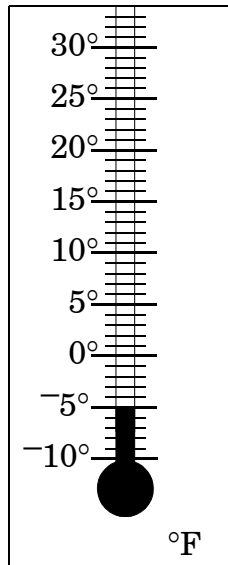
- A 5
- B 9
- C 16
- D 20

17. A new grocery store is having a grand opening celebration. Every third customer will receive a rose, and every fifth customer will receive a gift certificate. How many of the first 100 customers will receive both a rose and a gift certificate?

- A 6
- B 10
- C 16
- D 20

18. Latisha has two pieces of ribbon she plans to cut. One piece of ribbon is 48 inches and the other is 80 inches. She plans to cut all the ribbon into pieces of equal lengths. What is the **greatest** possible length of each piece?
- A 6 in.
  - B 8 in.
  - C 16 in.
  - D 32 in.
19. Angie works in a pet store. She needs to divide 36 angelfish, 42 rainbowfish, and 126 goldfish into aquariums so that each aquarium has the same number of each type of fish, and there are no fish left over. What is the **greatest** number of aquariums she can fill under these conditions?
- A 6
  - B 7
  - C 8
  - D 12
20. Hot dogs come in packages of ten and buns come in packages of eight. Shana wants to buy the same number of hot dogs and buns so that each hot dog has a bun. What is the **fewest** number of packages of buns that she can buy?
- A 4
  - B 5
  - C 8
  - D 10

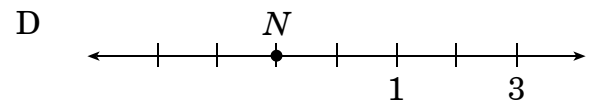
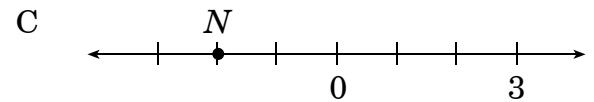
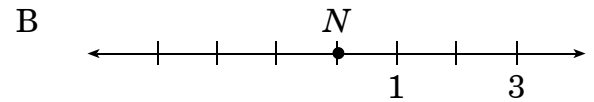
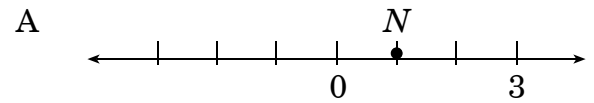
21. This thermometer shows the temperature in Boone on Monday.



If the temperature rose  $5^{\circ}\text{F}$  on Tuesday and dropped  $10^{\circ}\text{F}$  on Wednesday, what was the temperature on Wednesday?

- A  $-10^{\circ}\text{F}$
- B  $-5^{\circ}\text{F}$
- C  $0^{\circ}\text{F}$
- D  $15^{\circ}\text{F}$

22. On which number line does the letter  $N$  represent the integer  $-1$ ?



23. Which of the following statements is true?

- A  $2 > -2$
- B  $2 < -4$
- C  $-2 < -4$
- D  $-4 > 4$

24. In the table below, which city has the **coldest** average temperature for November?

**Average November Temperatures**

City	Average Temperature
P	$-13^{\circ}\text{F}$
Q	$59^{\circ}\text{F}$
R	$-15^{\circ}\text{F}$
S	$32^{\circ}\text{F}$

- A city P  
 B city Q  
 C city R  
 D city S
25. Last week's temperatures in Anchorage, Alaska, were as follows: Tuesday,  $-3^{\circ}\text{F}$ ; Wednesday,  $0^{\circ}\text{F}$ ; Thursday,  $3^{\circ}\text{F}$ ; and Friday,  $-1^{\circ}\text{F}$ . On which day was the temperature the coldest?
- A Tuesday  
 B Wednesday  
 C Thursday  
 D Friday

26. The five-day forecast for the South Pole lists the low temperatures (in Fahrenheit) as  $-24^{\circ}$ ,  $-28^{\circ}$ ,  $-29^{\circ}$ ,  $-25^{\circ}$ , and  $-30^{\circ}$ . Which choice shows the temperatures in order from lowest to highest?

- A  $-24^{\circ}$ ,  $-25^{\circ}$ ,  $-28^{\circ}$ ,  $-29^{\circ}$ ,  $-30^{\circ}$   
 B  $-30^{\circ}$ ,  $-28^{\circ}$ ,  $-29^{\circ}$ ,  $-25^{\circ}$ ,  $-24^{\circ}$   
 C  $-30^{\circ}$ ,  $-29^{\circ}$ ,  $-28^{\circ}$ ,  $-25^{\circ}$ ,  $-24^{\circ}$   
 D  $-30^{\circ}$ ,  $-29^{\circ}$ ,  $-28^{\circ}$ ,  $-24^{\circ}$ ,  $-25^{\circ}$
27. Evaluate:  $7^2 \times (9 - 4) + 10 \div 2 - 1$
- A 225  
 B 249  
 C 441  
 D 735
28. Simplify:  $2(5^2 + 2) - 6$
- A 16  
 B 18  
 C 42  
 D 48

29. Simplify:  $2 + (8 - 4) + 3^2 \times \frac{6}{2}$
- A 36  
B 35  
C 33  
D 24
30. What is the value of the following expression?
- $$3 + 3^2(4 + 3)$$
- A 38  
B 42  
C 45  
D 66
31. Karla has two more than five times the number of marbles that Wong has. Wong has 36 marbles. Which number sentence can be used to find the number of marbles,  $n$ , that Karla has?
- A  $(36 + 2) \times 5 = n$   
B  $(36 - 2) \times 5 = n$   
C  $5 \times 36 + 2 = n$   
D  $5 \times 36 - 2 = n$
32. In the summer, Ana earns \$6.00 an hour taking care of children. She works from 8:00 a.m. until 11:00 a.m. on Wednesday and Thursday and from 7:00 a.m. until 9:00 a.m. on Friday and Saturday. Which number sentence can be used to find the total amount of money ( $m$ ) Ana earns per week?
- A  $(3 + 2) \times 6 = m$   
B  $6 \times (3 + 3 + 2 + 2) = m$   
C  $(6 + 3) \times (6 + 2) = m$   
D  $(8 + 11 + 7 + 9) \times 6 = m$
33. In Joel's garden, there are 25 rows of vegetables. He has five more rows of peppers than tomatoes and two fewer rows of cucumbers than tomatoes. If  $y$  represents the number of rows of tomatoes in the garden, which number sentence can be used to find how many rows of each vegetable were planted?
- A  $y + (y + 5) + (y + 2) + y = 25$   
B  $(y + 5) + y = 25$   
C  $(y + 5) + (y - 2) = 25$   
D  $(y + 5) + (y - 2) + y = 25$

34. Michael and Larry scored 18 points in a basketball game. Michael scored twice as many points as Larry. How many points did Larry score?
- A 6  
B 8  
C 10  
D 12
35. Ted, Beth, and Sally are planning the school dance. The band is charging \$150.00, the pizzas will cost \$200.00, the drinks will cost \$50.00, and \$100.00 will be needed for decorations. 276 students have signed up for the dance. Of the following amounts, which is the **least** they can charge each of the students and still cover all the expenses?
- A \$2.25  
B \$2.00  
C \$1.75  
D \$1.50
36. The Cookie Factory reduced the price of its cookies after 8:30 p.m. from \$0.50 per cookie to \$0.40 per cookie. Vanessa has six dollars. How many **more** cookies can she buy if she waits until after 8:30 p.m. to make her purchase?
- A 2  
B 3  
C 12  
D 15
37. Kyle needs to buy brushes, nails, and paint to make bookshelves. He will sell the bookshelves for \$18 each. What additional information does Kyle need to calculate the profit he will make from selling 10 bookshelves?
- A the kind of wood  
B the size of the nails and the color of the paint  
C the amount he will collect for selling 10 bookshelves  
D his cost to make one bookshelf

38. Jill got  $1\frac{1}{2}$  times as many problems right as she did wrong on her science test. If she answered 20 questions incorrectly, how many questions were on the test?
- A 10
- B 30
- C 50
- D 70

### End of Goal 1 Sample Items

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## Answers to EOG Mathematics Grade 6 Sample Items

### Goal 1

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1. **Objective 1.01**  
Read, write and make models of numbers including percents and exponentials.  
**Thinking Skill:** Analyzing                      **Correct Answer:** D
  
2. **Objective 1.01**  
Read, write and make models of numbers including percents and exponentials.  
**Thinking Skill:** Analyzing                      **Correct Answer:** B
  
3. **Objective 1.01**  
Read, write and make models of numbers including percents and exponentials.  
**Thinking Skill:** Analyzing                      **Correct Answer:** C
  
4. **Objective 1.01**  
Read, write and make models of numbers including percents and exponentials.  
**Thinking Skill:** Applying                      **Correct Answer:** A
  
5. **Objective 1.02**  
Relate fractions, decimals, and percents.  
**Thinking Skill:** Applying                      **Correct Answer:** D
  
6. **Objective 1.02**  
Relate fractions, decimals, and percents.  
**Thinking Skill:** Organizing                      **Correct Answer:** D
  
7. **Objective 1.02**  
Relate fractions, decimals, and percents.  
**Thinking Skill:** Applying                      **Correct Answer:** C
  
8. **Objective 1.03**  
Compare and order fractions, decimals, and percents.  
**Thinking Skill:** Organizing                      **Correct Answer:** A
  
9. **Objective 1.03**  
Compare and order fractions, decimals, and percents.  
**Thinking Skill:** Organizing                      **Correct Answer:** B

## Answers to EOG Mathematics Grade 6 Sample Items

### Goal 1

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- 10. Objective 1.03**  
Compare and order fractions, decimals, and percents.  
**Thinking Skill:** Organizing      **Correct Answer:** B
- 11. Objective 1.05**  
Multiply and divide fractions, mixed numbers, and decimals.  
**Thinking Skill:** Applying      **Correct Answer:** B
- 12. Objective 1.06**  
Add and subtract fractions and mixed numbers with unlike denominators.  
**Thinking Skill:** Applying      **Correct Answer:** B
- 13. Objective 1.07**  
Use estimation and mental math to solve problems with fractions, decimals, and percents; explain solution.  
**Thinking Skill:** Applying      **Correct Answer:** A
- 14. Objective 1.07**  
Use estimation and mental math to solve problems with fractions, decimals, and percents; explain solution.  
**Thinking Skill:** Analyzing      **Correct Answer:** A
- 15. Objective 1.07**  
Use estimation and mental math to solve problems with fractions, decimals, and percents; explain solution.  
**Thinking Skill:** Applying      **Correct Answer:** B
- 16. Objective 1.07**  
Use estimation and mental math to solve problems with fractions, decimals, and percents; explain solution.  
**Thinking Skill:** Applying      **Correct Answer:** D
- 17. Objective 1.08**  
Solve problems using prime factorization, common factors and common multiples. Explain solutions.  
**Thinking Skill:** Applying      **Correct Answer:** A
- 18. Objective 1.08**  
Solve problems using prime factorization, common factors and common multiples. Explain solutions.  
**Thinking Skill:** Applying      **Correct Answer:** C

## Answers to EOG Mathematics Grade 6 Sample Items

### Goal 1

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- 19. Objective 1.08**  
Solve problems using prime factorization, common factors and common multiples.  
Explain solutions.  
**Thinking Skill:** Applying                      **Correct Answer:** A
- 20. Objective 1.08**  
Solve problems using prime factorization, common factors and common multiples.  
Explain solutions.  
**Thinking Skill:** Applying                      **Correct Answer:** B
- 21. Objective 1.10**  
Use models and pictures to demonstrate understanding of integers. Record results.  
**Thinking Skill:** Applying                      **Correct Answer:** A
- 22. Objective 1.10**  
Use models and pictures to demonstrate understanding of integers. Record results.  
**Thinking Skill:** Analyzing                      **Correct Answer:** D
- 23. Objective 1.11**  
Compare and order integers.  
**Thinking Skill:** Analyzing                      **Correct Answer:** A
- 24. Objective 1.11**  
Compare and order integers.  
**Thinking Skill:** Analyzing                      **Correct Answer:** C
- 25. Objective 1.11**  
Compare and order integers.  
**Thinking Skill:** Analyzing                      **Correct Answer:** A
- 26. Objective 1.11**  
Compare and order integers.  
**Thinking Skill:** Organizing                      **Correct Answer:** C
- 27. Objective 1.12**  
Use the order of operations to simplify numerical expressions with parentheses and exponents.  
**Thinking Skill:** Applying                      **Correct Answer:** B

## Answers to EOG Mathematics Grade 6 Sample Items

### Goal 1

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- 28. Objective 1.12**  
Use the order of operations to simplify numerical expressions with parentheses and exponents.  
**Thinking Skill:** Applying                      **Correct Answer:** D
- 29. Objective 1.12**  
Use the order of operations to simplify numerical expressions with parentheses and exponents.  
**Thinking Skill:** Applying                      **Correct Answer:** C
- 30. Objective 1.12**  
Use the order of operations to simplify numerical expressions with parentheses and exponents.  
**Thinking Skill:** Applying                      **Correct Answer:** D
- 31. Objective 1.13**  
Translate word problems into number sentences and solve. Explain solutions.  
**Thinking Skill:** Analyzing                      **Correct Answer:** C
- 32. Objective 1.13**  
Translate word problems into number sentences and solve. Explain solutions.  
**Thinking Skill:** Analyzing                      **Correct Answer:** B
- 33. Objective 1.13**  
Translate word problems into number sentences and solve. Explain solutions.  
**Thinking Skill:** Analyzing                      **Correct Answer:** D
- 34. Objective 1.13**  
Translate word problems into number sentences and solve. Explain solutions.  
**Thinking Skill:** Applying                      **Correct Answer:** A
- 35. Objective 1.14**  
Analyze problem situations, determine if there is sufficient information to solve the problem, identify missing or extraneous data, select appropriate strategies, and use an organized approach to solve multi-step problems; use calculators when appropriate.  
**Thinking Skill:** Applying                      **Correct Answer:** B

## Answers to EOG Mathematics Grade 6 Sample Items

### Goal 1

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**36. Objective 1.14**

Analyze problem situations, determine if there is sufficient information to solve the problem, identify missing or extraneous data, select appropriate strategies, and use an organized approach to solve multi-step problems; use calculators when appropriate.

**Thinking Skill:** Applying    **Correct Answer:** B

**37. Objective 1.14**

Analyze problem situations, determine if there is sufficient information to solve the problem, identify missing or extraneous data, select appropriate strategies, and use an organized approach to solve multi-step problems; use calculators when appropriate.

**Thinking Skill:** Analyzing    **Correct Answer:** D

**38. Objective 1.14**

Analyze problem situations, determine if there is sufficient information to solve the problem, identify missing or extraneous data, select appropriate strategies, and use an organized approach to solve multi-step problems; use calculators when appropriate.

**Thinking Skill:** Applying    **Correct Answer:** C