Grade 7: Post-Course Test (1 - 48)

1. Evaluate the expression.

$$(8 \cdot 5 - 2^5) \div 2 = \square$$

2. Simplify the expression. Write your answer as a power.

$$4 \cdot 4^2 = \square$$

3. Simplify the expression. Write your answer as a power.

$$(4^6)^2 = \square$$

4. Simplify the expression. Write your answer as a power.

$$\frac{7^7}{7^5} = \square$$

8. At 4 P.M., the total snowfall is 2 centimeters. At 7 P.M., the total snowfall is 12 centimeters. What is the mean hourly snowfall? Write your answer in simplest form as a fraction or mixed number.

The mean snowfall is $\square$ centimeters per hour.

9. Write the fraction as a decimal.

$$\frac{36}{5} = \square$$

10. Find the product. Write your answer as a fraction or a mixed number in simplest form.

$$-1\frac{1}{3} \cdot \left(-\frac{5}{6}\right) = \square$$

11. Find the quotient. Write your answer as a decimal.

$$-8.8 \div (-3.2) = \square$$

26. Write an equation for the proportional relationship shown in the table.

x	0.5	1	1.5	2
y	27	54	81	108

$$y = \square \, x$$

27. Find the constant of proportionality k in the equation $y = 28x$.

$$k = \square$$

28. A scale drawing of a square has a side length of 6 centimeters. The drawing has a scale of 1 cm : 6 ft. Find the actual perimeter and area of the square.

Perimeter $= \square$ ft

Area $= \square$ ft^2

29. Write the percent as a decimal.

$$7\% = \square$$

30. Write the decimal as a percent.

$$0.28 = \square \, \%$$

31. You estimate that there are 64 marbles in a jar. The actual amount is 46 marbles. Find the percent error. Round to the nearest tenth of a percent if necessary.

percent error $\approx \square \, \%$

32. Find the selling price of a $10 item after a 50% markup.

The selling price is $\square$.

35. There are 9 yellow marbles and 10 silver marbles in a bag. You randomly choose one of the marbles. What is the probability of choosing a yellow marble? Write your answer as a fraction in simplest form.

The probability of choosing a yellow marble is ☐.

Grade 7: FL 2023•Grade 7: Post-Course Test (1 - 48)• Question #35

36. The table shows the results of rolling a number cube 250 times. How does the experimental probability of rolling an even number compare with the theoretical probability?

Rolling a Number Cube

Number rolled	1	2	3	4	5	6
Times rolled	41	40	40	44	49	36

The experimental probability of rolling an even number is [▾]%, which is [▾] to the theoretical probability

of [▾]%. To get the experimental probability closer to the theoretical probability, [▾] the number of trials.

Grade 7: FL 2023•Grade 7: Post-Course Test (1 - 48)• Question #36

40. You ask 120 randomly chosen students to name their favorite ice cream flavor. There are 1800 students in the school. Estimate the number of students in the school whose favorite ice cream flavor is chocolate chip.

Favorite Ice Cream Flavor

Vanilla	39
Chocolate	35
Strawberry	27
Chocolate Chip	19

The number of students in the school whose favorite ice cream flavor is chocolate chip is about ☐.

20. In a game, you pilot a spaceship and gain a point for every asteroid you destroy. The game ends when your ship is hit by an asteroid. You already have 45 points. Graph your possible final scores for the game.
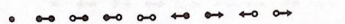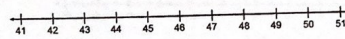
Which statement describes your possible final score?

○ Your final score is less than 45 points.

○ Your final score is at least 45 points.

○ Your final score is at most 45 points.

○ Your final score is greater than 45 points.

Grade 7: FL 2023•Grade 7: Post-Course Test (1 - 48)• Question #20

21. Graph the solution of $x - 5 \geq 4$.

Grade 7: FL 2023•Grade 7: Post-Course Test (1 - 48)• Question #21

41. The tables show random samples of the ages of viewers of two different movies.

Movie A

34	25	28	29	27
32	26	32	30	33
32	29	33	31	31
31	31	30	35	29
30	28	30	29	30
32	30	28	27	28

Movie B

44	45	42	43	45
42	46	41	41	43
40	39	40	41	47
48	43	44	41	43
43	44	44	43	45
42	42	45	46	38

Which data set has a greater center?

○ Movie A

○ Movie B

○ The centers are the same.

Which data set has greater variation?

○ Movie A

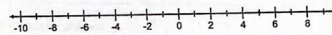○ Movie B

○ The variation is about the same.

In general, which movie has younger viewers?

○ Movie A

○ Movie B

○ Viewers of both movies are about the same age.

○ Cannot be determined

Grade 7: FL 2023•Grade 7: Post-Course Test (1 - 48)• Question #41

38. A farmer displays how the milk production of cows varies from least to most. Which display is the most appropriate to represent the data?

   ○ Box-and-whisker plot

   ○ Stem-and-leaf plot

   ○ Bar graph

   Grade 7: FL 2023>Grade 7: Post-Course Test (1 - 40)> Question #38

39. The stem-and-leaf plot shows the gas mileages of several vehicles made by a company.

Stem	Leaf
1	8 9 9
2	2 3 5 5 6 7 7 9
3	0 0 3 3 4 5 5 5 6 9 9
4	0 0 4 5 5 8
5	0 1 2 2

   Key: 1|8 = 18 miles per gallon

   The [_____ ▼] the most appropriate measure(s) to describe the center. The [_____ ▼] the most appropriate measure(s) to describe the variation.

   Grade 7: FL 2023>Grade 7: Post-Course Test (1 - 40)> Question #39

33. You deposit $100 in a savings account. The account earns 5% simple interest per year.

   a. What is the interest earned after 8 years?

   The interest earned is $[___] after 8 years.

   b. What is the balance after 8 years?

   The balance is $[___] after 8 years.

   Grade 7: FL 2023>Grade 7: Post-Course Test (1 - 40)> Question #33
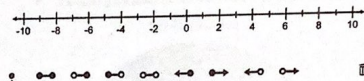
34. The probability of an event is $\frac{17}{50}$. Describe the likelihood of the event.

   ○ Certain

   ○ Likely

   ○ Equally likely to happen or not happen

   ○ Unlikely

   ○ Impossible

   Grade 7: FL 2023>Grade 7: Post-Course Test (1 - 40)> Question #34

22. Graph the solution of $3x > 21$.

   Grade 7: FL 2023>Grade 7: Post-Course Test (1 - 40)> Question #22

23. A person walks $\frac{1}{4}$ mile in $\frac{1}{8}$ hour.

   The person's speed is [___] miles per hour.

   Grade 7: FL 2023>Grade 7: Post-Course Test (1 - 40)> Question #23

24. Tell whether 19:9 and 13:7 form a proportion.

   ○ Yes   ○ No

   Grade 7: FL 2023>Grade 7: Post-Course Test (1 - 40)> Question #24

16. Find the difference.

   $$\left(\frac{4}{5}x - 2\right) - \left(\frac{1}{5}x - 1\right) = \boxed{}$$

   Grade 7: FL 2023>Grade 7: Post-Course Test (1 - 40)> Question #16

18. Solve $\frac{x}{15} + \frac{1}{3} = \frac{4}{3}$.

   The solution is $x = \boxed{}$.

   Grade 7: FL 2023>Grade 7: Post-Course Test (1 - 40)> Question #18

19. You install 580 feet of fencing along the perimeter of a rectangular yard. The width of the yard is 144 feet. What is the length of the yard?

   The length of the yard is [___] feet.

   Grade 7: FL 2023>Grade 7: Post-Course Test (1 - 40)> Question #19

15. Each person in a group buys a movie ticket, a drink, and a popcorn. How much does the group pay when there are 4 people in the group?

Prices	
Ticket	$7.00
Drink	$2.25
Popcorn	$3.00

   ○ $12.25

   ○ $16.25

   ○ $28.00

   ○ $49.00

   Grade 7: FL 2023>Grade 7: Post-Course Test (1 - 40)> Question #15

5. Find the sum. Write your answer in simplest form.

$$-\frac{3}{4} + \frac{3}{4} = \square$$

6. Find the difference. Write your answer as a decimal.

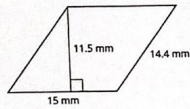$$1.74 - (-7.18) = \square$$

7. The table shows the change in the water level (in centimeters) of a reservoir for three months. Find the total change in the water level for the three-month period. Write your answer as a fraction or mixed number in simplest form.

Month	Change in water level (centimeters)
1	$-1\frac{2}{7}$
2	$1\frac{2}{3}$
3	1

The total change in the water level for the three-month period is $\square$ centimeters.

12. Evaluate. Write your answer as a fraction or mixed number in simplest form.

$$\frac{-\frac{4}{3}}{\frac{1}{5}+1} = \square$$

13. An online retailer allows customers to rate items on a scale from −5 to 5. An item receives the scores below.

0, −1.25, −0.75, 4.5, −0.25, −4.25, −1.5

Find the mean score. Write your answer as a decimal.

The mean score is $\square$.

14. Simplify the expression.

$$-\frac{1}{4}x - 1 + \frac{1}{2}x - 12 = \square$$

17. Simplify $\frac{1}{2}(6x - 2) + 10x$.

$$\frac{1}{2}(6x - 2) + 10x = \square$$

42. Find the area of the parallelogram.

11.5 mm   14.4 mm
15 mm

$A = \square$ mm²

37. The circle graph shows the number of units of pet food sold at a pet store in one week.

Pet Food Sales

Small mammal 20

Cat 15
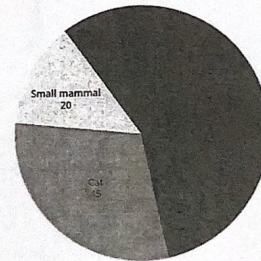
The circle graph represents $5,000 in sales. How much was collected for fish food?

The amount collected for fish food is $\square$.

43. Find the area of the trapezoid.

11 ft
14 ft
14 ft
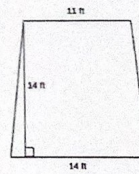
$A = \square$ ft²

44. Find the circumference of the circle. Give the exact answer as well as an approximate answer rounded to two decimal places.

42 cm

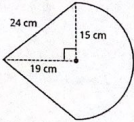The circumference is $\square$ π, or about $\square$ cm.

45. Find the area of the circle. Give the exact answer as well as an approximate answer rounded to two decimal places.

24 cm

The area is ⬚ π , or about ⬚ cm².

Grade 7: FL 2023>Grade 7: Post-Course Test (1 - 48)> Question #45

46. Find the perimeter and the area of the figure. Round answers to the nearest hundredth if necessary.
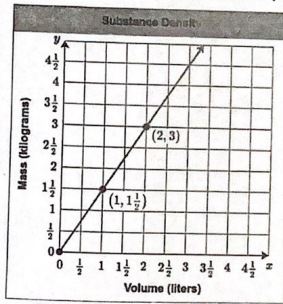

24 cm

15 cm

19 cm

The perimeter is ⬚ centimeters.

The area is ⬚ square centimeters.

25. The graph shows the density of a substance. Find the density in kilograms per liter.

Substance Density

Mass (kilograms)

(2, 3)

(1, 1½)

Volume (liters)

The density of the substance is ⬚ kilogram(s) per liter.

Grade 7: FL 2023>Grade 7: Post-Course Test (1 - 48)> Question #25
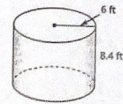
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47. Find the surface area of the cylinder. Round your answer to the nearest tenth.

6 cm

16.8 cm
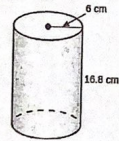
S ≈ ⬚ cm²

Grade 7: FL 2023>Grade 7: Post-Course Test (1 - 48)> Question #47

48. Find the volume of the cylinder. Give the exact answer as well as an approximate answer to the nearest tenth.

6 ft

8.4 ft

The volume is ⬚ π , or about ⬚ ft³.

Grade 7: FL 2023>Grade 7: Post-Course Test (1 - 48)> Question #48