



Dear incoming 7th grader,

We hope you had a wonderful 6th grade year!

This summer math packet has been created to help you review and prepare for 7th grade Mathematics. It covers many of the math topics that you learned in class this year, which we will be building on next year.

- Please <u>show all of your work</u> for every problem in the packet. You can show your work on a separate sheet of paper.
- The paper should be neatly organized with every problem numbered.
- Highlight, draw a box, or draw a circle around your final answers.
- Do NOT use a calculator

*Note: If you submit your summer packet without the work, you **WILL NOT** receive full credit.

The completed packet is due on the first week of school by:

Friday, August 23rd.

It will count as your first math grade of the new school year.

We hope you have a nice summer and look forward to seeing you in August!

- 1. At 7 P.M. the temperature was 5°F. At midnight the temperature was $-7^{\circ}F$. What was the change in temperature?
 - A -12°F C 5°F
 - B −7°F D 12°F
- 2. What is the product of -12(-5)?
 - A -60 C 48
 - B -48 D 60
- 3. What is true about the relationship between miles and gallons?

gallons	2	4	6	8
miles	30	60	90	120

- A There is no relationship between miles and gallons.
- B There is a proportional relationship between miles and gallons.
- C There is a 1 to 15 relationship between miles and gallons.
- D There is a 30 to 1 relationship between miles and gallons.
- 4. Which decimal is equivalent to $\frac{4}{20}$?
 - A 0.2 1.4 С
 - D 4.2 B 0.6
- 5. At the farmers' market, you can buy 3 jars of honey for \$12, 6 jars of honey for \$24, or 9 jars of honey for \$36. What is the constant of proportionality for buying jars of honey?
 - A 3 C 6
 - B 4 D 12
- 6. Andrella makes bead bracelets. Each bracelet is 7 inches long. Andrella has a 67-inch length of beaded string. How many necklaces can she make?
 - A 7 necklaces C 10 necklaces
 - B 9 necklaces D 11 necklaces

Date

Class 7. The ground temperature at sea level is 60°F. For every 100-foot increase in elevation, the temperature rises $\frac{1}{10}$ of one degree. At an altitude of 2,000 feet, what will be the likely temperature? A 58°F C 72°F B 62°F D 80°F 8. Tamara walked $\frac{3}{4}$ mile in $\frac{1}{2}$ hour. Which of the following represents the unit rate that Tamara walked? A $\frac{1}{2}$ mi/h C $\frac{3}{4}$ mi/h B $\frac{2}{3}$ mi/h D $1\frac{1}{2}$ mi/h 9. Simplify $\frac{1}{2}(2a+b) - (4a+b)$. A $-3a - \frac{1}{2}b$ C $-3a + \frac{3}{2}b$ B -2a+2bD -3a-b 10. Jay spent \$6.40 to buy 4 muffins. How much will 9 muffins cost? A \$12.03 C \$14.40 B \$12.80 D \$144.00 11. A reduced scale drawing of a rectangle measures 12 inches by 16 inches. The scale factor is $\frac{1}{4}$. What is the size of the original rectangle? A 3 in. \times 4 in. C 36 in. × 48 in. B 16 in. × 20 in. D 48 in. × 64 in. 12. Which fraction is equivalent to -0.12? A –<u>3</u> $C -\frac{4}{-1}$

13. The cost of 2 pounds of coffee is \$17.95. To the nearest dollar, what is the cost of 5 pounds of coffee?

\$34	С	\$45
	\$34	\$34 C

- B \$36 D \$90
- 14. On a map, the distance between two cities is 5.25 inches. The map scale is 1 in.:25 mi To the nearest mile, what is the actual distance between the two cities?

А	13 mi	С	125 mi
-		-	

- B 30 mi D 131 mi
- Patti got a new part-time job. Her hourly wage increased from \$10.50 to \$12.39. What was the percent increase in Patti's hourly wage?
 - A 1.8% C 18%
 - B 15.25% D 189%
- 16. To the nearest cubic centimeter, what is the volume of the prism below?



17. A bag contains 12 blue marbles, 5 red marbles, and 3 green marbles. Jonas selects a marble and then returns it to the bag before selecting a marble again. If Jonas selects a blue marble 4 out of 20 times, what is the experimental probability that the next marble he selects will be blue?

А	.02%	С	20%
В	2%	D	200%

18. The circumference of a circle is 36π inches. What is the radius of this circle?

А	9 in.	С	18 in.

B 12 in. D 36 in.

19. Which equation is represented by the graph below?



C y - 1 = x

D
$$y-2=x$$

20. To the nearest square inch, what is the surface area of the square pyramid below



- B 200 in² D 700 in²
- 21. Cybil flips a coin and rolls a fair number cube at the same time. What is the probability that she will toss tails and roll a number less than 3?

A	<u>1</u> 6	С	$\frac{2}{5}$
В	$\frac{1}{3}$	D	1 2

22. The Rogers family drove 220 miles in 5.5 hours. How many miles would they drive at this same rate in 4 hours?

А	88 mi	С	160 mi
B14	47 mi	D	176 mi

Date

23. Your school is choosing a new school mascot to represent all team sports.Which group should you ask to get a random sample of student opinion?

Name ___

- A students on the basketball team
- B every 10th student that enters the cafeteria
- C the first 20 seniors at the library
- D students on the cheerleading squad
- 24. A rectangle is 14 inches long and 4 inches wide. A smaller, similar rectangle is 2 inches wide. To the nearest inch, what is the length of the smaller rectangle?
 - A $3\frac{1}{2}$ in. C 8 in. B 7 in. D 28 in.
- 25. There are 30 colored marbles inside a bag. Six marbles are yellow, 9 are red, 7 are white, and 8 are blue. One is drawn at random. Which color is most likely to be chosen?
 - A white C blue
 - B red D yellow
- 26. Which table represents the same linear relationship as the equation y = 2x + 6?

x	0	1	2	5
у	6	7	8	10
X	2	3	4	5
У	8	9	10	11
x	2	3	4	5
У	10	12	14	16
	x y x y x y	 x 0 y 6 x 2 y 8 x 2 y 10 	x 0 1 y 6 7 x 2 3 y 8 9 x 2 3 y 8 10	x 0 1 2 y 6 7 8 x 2 3 4 y 8 9 10 x 2 3 4 y 8 9 10 x 2 3 4 y 10 12 14

D

Х

y

2 3 4 5 16 18 20 22 27. Evan's dog weighs $15\frac{3}{8}$ pounds. What is this weight written as a decimal?

А	15.125 lb	С	15.385 lb
В	15.375 lb	D	15.625 lb

28. The spinner below is divided into sections that are red, green, or blue. What is the probability that the spinner will land on red or green?



29. Based on the dot plots below, which of the following is a true statement?



- A Set B has the greater mode.
- B Set A has more items than set B.
- C Set A is more symmetric than set B.
- D Set B has the greater range.
- 30. For a trip, Eli packed 3 shirts, 3 pairs of pants, and 2 pairs of shoes. How many different outfits can Eli make?
 - A 6 outfits C 9 outfits
 - B 8 outfits D 18 outfits

31. The net of a triangular prism is shown below. What is the surface area of the prism?



- 32. A middle school has 470 students. Regina surveys a random sample of 40 students and finds that 28 have cell phones. How many students at the school are likely to have cell phones?
 - A 132 students C 329 students
 - B 188 students D 338 students
- 33. Which of the following is the solution to the inequality below?

-5x - 10 < 20

A
$$x > -6$$
 C $x < -6$

- D x < -2B x > -2
- 34. Nina operates a dog walking service. She charges a flat fee of \$15 plus \$5 per hour. Which equation represents this linear relationship?

A	y = 15x - 5	Су	= 5 <i>x</i> - 15
D	V 15V 2		5x 15

в y=15x+3 y = 5x + 15 35. To the nearest tenth, what is the area of the figure below? Segment BF is a line of symmetry of the pentagon ABCDE. Use 3.14 for *π*.



36. What is the measure of $\angle BGD$?



37. The Masim family's monthly budget is shown in the circle graph below. The family has a current monthly income of \$5,000. How much money do they spend on food each month?



- 38. A box is 30 inches long wide, 16 inches long, and 14 inches high. To the nearest cubic inch, what is the volume of the box?
 - A 224 in³ C 480 in³
 - B 420 in³ D 6,720 in³
- 39. A circle has a radius of 7 inches. What is the area of the circle?
 - A 21.98 in² C 153.86 in²
 - B 43.96 in² D 615.44 in²
- 40. The circle graph shows the results of an employment survey of 800 people. How many of the people surveyed were unemployed?



- 41. An equestrian center is surveying riders to determine which type of horse is preferred. Which of the following is a random sampling method?
 - A The equestrian center manager surveys the first 50 riders.
 - B The equestrian center surveys every tenth rider at the stable.
 - C The equestrian center manager surveys 50 of his friends.
 - D The equestrian center surveys the 50 best riders.

- 42. A 16-inch piece of string is 40.64 centimeters long. To the nearest 0.01 a centimeter, how long will a 42-inch piece of ribbon be?
 - A 56.64 cm
 - B 82.64 cm
 - C 106.68 cm
 - D 1,706.88 cm
- 43. One circle has a diameter of 6 inches. A second, larger circle has a diameter that is four times the diameter of the first circle. What is the ratio of the area of the smaller circle to the larger circle?

А	2:3	C	: 1:16
А	2:3	C	; 1:16

- B 1:6.4 D 1:64
- Use the box plot for 44–45.

Survey of Ages of Participants

			•	•	(• •			•	
		< 5	15	25	35	45	55	65	75	85
44.	Wh	at is	s the	e m	edi	an?)			
	А	10						С	40)
	В	25						D	45)
45.	Wh	at is	s the	e in	tero	qua	rtile	e ra	nge	€?
	А	10						С	40)
	в	20						D	45	5

Use the figure for 46-47.



46.What is the measure of \angle FEG?

А	30°	С	50°
В	40°	D	70°

- 47. Which of the following is not true?
 - A $5x + 6x = 70^{\circ}$
 - B $5x + 6x < 180^{\circ}$
 - C $5x + 6x = 110^{\circ}$
 - D $5x + 6x + 70^{\circ} = 180^{\circ}$
- 48. Which equation represents the data shown in the table below?

Cost (y)	5	9	13	17
Gallon (<i>x</i>)	2	4	6	8
A $y = 2x + 1$		С	<i>y</i> = 2	2.5 <i>x</i>
B $y = 3x - 1$		D	y = 2	2.5 <i>x</i> +

49. Which number line represents the solution to the inequality below?



- 50. Three stores have the same tablet computer on sale. The regular price of the tablet is \$150. Store A is offering the tablet on sale at 15% off the regular price. Store B is offering a \$25 coupon to be deducted from the regular price. Store C is offering a rebate of \$20.00 to purchasers. Store D has the tablet on sale for \$120.00. Which store is offering the tablet at the lowest cost?
 - A Store A
 - B Store B
 - C Store C
 - D Store D
- 51. The circumference of a circle is 12π feet. What is the radius of the circle? A 3 ft C 12 ft
 - B 6 ft D 24 ft

52. The Demir family has a monthly budget of \$5,500. Mrs. Demir works fulltime and takes home \$4,000 each month. Mr. Demir works part-time and brings home earns \$16 per hour. How many hours per month must Mr. Demir work at his parttime job to make sure that he and Mrs. Demir have met their monthly budget?

4	37.5 h	С	93.75 h
4	37.5 h	C	93.75 h

- B 75 h D 125 h
- 53. Chana has a bag of colored tiles. Without looking, she removes one tile, records the color, and replaces it. She repeats this process 40 times and records the results in the table.

Color	Frequency
Red	9
Blue	12
Green	14
Yellow	5

What is the probability that Chana will not pick a yellow tile on her forty-first time?

A	$\frac{1}{8}$	С	$\frac{7}{8}$
В	$\frac{1}{4}$	D	9 10

54. Mills Middle School has 280 students. A random sample of 30 students were asked how many cars their families have at home. The results are shown in the dot plot below.



Which of the following is a qualitative statement that is reasonable based on the data?

- A The fewest number of cars at home is 0.
- B Most students have 2 or fewer cars at home.
- C Most students have 3 or more cars at home.
- D The median number of cars at home is 3.
- 55. Aaron buys 3 ties for \$19.95 each, a belt for \$23.50, and a pair of boots for \$124.95. The sales tax in his city is 5%. To the nearest cent, what is the total cost of Aaron's purchases?
 - A \$176.82 C \$218.72
 - B \$197.77 D \$304.29
- 56. The probability of spinning an odd number on a spinner is 62 percent. What is the probability of **not** spinning an odd number?

А	0.28	С	0.48

- B 0.38 D 0.62
- 57. The dot plots below show the number of hours per week that some sixth graders and eighth graders play video games. What is the difference between the mode for sixth graders and the mode for eighth graders?



- 58.A baseball player gets a hit 20% of the times he is at bat. Out of the next 15 times at bat, how many hits can you expect the player to get?
 - A 2 hits C 5 hits
 - B 3 hits D 12 hits
- 59. What is the volume of the prism below?



- B 125 cm³ D 200 cm³
- 60. What is the value of *x* in the equation below?

61. To the nearest hundredth, what is the area of the figure below? Use 3.14 for π .



62. Mike has \$75 to spend at a local model car show. The entrance price for the show is \$20. At one seller's stand, Mike finds some model cars that he likes that are \$7.50 each. What is the maximum number of model cars that Mike can buy at that stand?

А	6 cars	С	8 cars

В	7 cars	D	10 cars
Ъ	1 Cars	U	10 0015

63. A 7-by-7 foot rug is shown below. A coin is tossed onto the rug randomly. What is the probability that the coin will land on an area that is white?



- 64. On a road map, the distance from Greenmount to Yorktowne is 2 inches. The map scale is 1 in.:25 mi. How many miles is the actual distance between the two cities?
 - A 12.5 mi C 50 mi
 - B 25 mi D 125 mi
- 65. The temperature in Jukkasjarvi, Sweden, was –3° at 3 P.M. After 6 hours, the temperature dropped to –15°. The temperature dropped the same amount each hour. What was the change in temperature each hour?
 - A -2° C 3°
 - $B -5^{\circ} \qquad D 12^{\circ}$
- 66. The two quadrilaterals below are similar. What is the length of \overline{EF} ?



67. The Canadian \$2 coin has a diameter of 28 millimeters. To the nearest 0.01 mm, what is the circumference of this coin?

А	87.92 mm	С	615.44 mm
В	175.84 mm	D	2,461.76 mm

68. Rinaldo is buying a new truck for \$36,000. He is entitled to an 8% rebate. How much will the truck cost after the rebate?

A \$22,800 C	\$33,120
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- B \$29,520 D \$35,999
- 69. A bike rental company charges a \$10 fee plus \$5 per hour. Sofia has \$25 to spend. Which inequality could you use to find *x*, the number of hours Sofia could rent a bike?
 - A 10x + 5 > 25 C $10x + 5 \ge 25$
 - B 5x + 10 < 25 D $5x + 10 \le 25$
- 70. To the nearest square meter, what is the area of the figure below?



71. The Dead Sea is at an elevation of -1,360 feet. A seabird is flying over the Dead Sea at an elevation of -422 feet. If the bird lands on the Dead Sea, what will be its change in elevation?

А	–1,782 ft	С	938 ft
В	–938 ft	D	1,782 ft

72. On a scale drawing, the image of an alligator is 7 inches long. The scale factor

is $\frac{1}{25}$. What is the actual length of the

alligator in inches?

А	28 in.	С	175 in.
В	35.7 in.	D	280 in.