



AcadeMir Charter Schools

2024 SUMMER INCOMING 7TH GRADE MATH PACKET

Please turn into your Math teacher by Friday, August 23rd.

ACADEMIR CHARTER SCHOOLS



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 show all of your work 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!

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

- A \$34 C \$45
 B \$36 D \$90

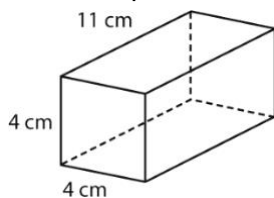
14. On a map, the distance between two cities is 5.25 inches. The map scale is 1 in.:25 mi To the nearest mile, what is the actual distance between the two cities?

- A 13 mi C 125 mi
 B 30 mi D 131 mi

15. 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?



- A 19 cm^3 C 88 cm^3
 B 44 cm^3 D 176 cm^3

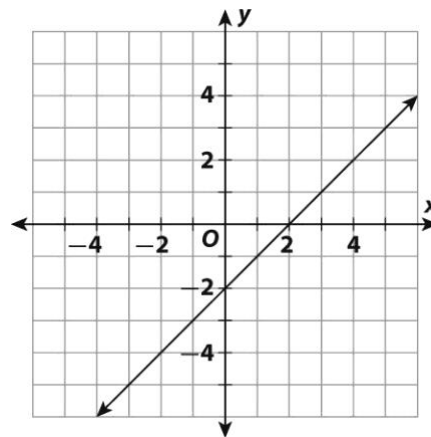
17. A bag contains 12 blue marbles, 5 red marbles, and 3 green marbles. Jonas selects a marble and then returns it to the bag before selecting a marble again. If Jonas selects a blue marble 4 out of 20 times, what is the experimental probability that the next marble he selects will be blue?

- A .02% C 20%
 B 2% D 200%

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

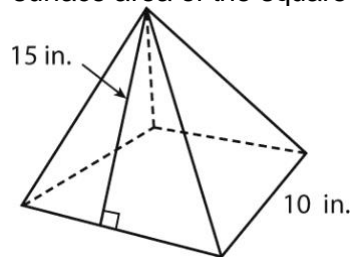
- A 9 in. C 18 in.
 B 12 in. D 36 in.

19. Which equation is represented by the graph below?



- A $y + 2 = x$
 B $y + 1 = x$
 C $y - 1 = x$
 D $y - 2 = x$

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



- A 175 in^2 C 400 in^2
 B 200 in^2 D 700 in^2

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 $\frac{1}{6}$ C $\frac{2}{5}$
 B $\frac{1}{3}$ D $\frac{1}{2}$

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

- A 88 mi C 160 mi
 B 147 mi D 176 mi

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?
- 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.
 - B 7 in.
 - C 8 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
 - B red
 - C blue
 - D yellow
26. Which table represents the same linear relationship as the equation $y = 2x + 6$?

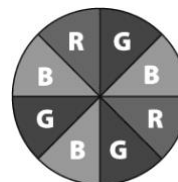
| | | | | | |
|---|----------|---|---|---|----|
| A | x | 0 | 1 | 2 | 5 |
| | y | 6 | 7 | 8 | 10 |

| | | | | | |
|---|----------|---|---|----|----|
| B | x | 2 | 3 | 4 | 5 |
| | y | 8 | 9 | 10 | 11 |

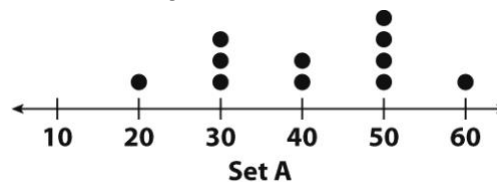
| | | | | | |
|---|----------|----|----|----|----|
| C | x | 2 | 3 | 4 | 5 |
| | y | 10 | 12 | 14 | 16 |

| | | | | | |
|---|----------|----|----|----|----|
| D | x | 2 | 3 | 4 | 5 |
| | y | 16 | 18 | 20 | 22 |

27. Evan's dog weighs $15\frac{3}{8}$ pounds. What is this weight written as a decimal?
- A 15.125 lb
 - B 15.375 lb
 - C 15.385 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?

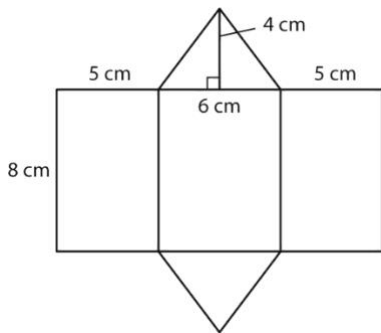


- A $\frac{1}{4}$
 - B $\frac{3}{8}$
 - C $\frac{1}{2}$
 - D $\frac{5}{8}$
29. Based on the dot plots below, which of the following is a true statement?



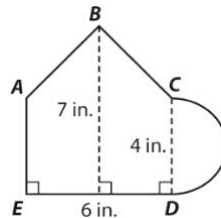
- A Set B has the greater mode.
 - B Set A has more items than set B.
 - C Set A is more symmetric than set B.
 - D Set B has the greater range.
30. For a trip, Eli packed 3 shirts, 3 pairs of pants, and 2 pairs of shoes. How many different outfits can Eli make?
- A 6 outfits
 - B 8 outfits
 - C 9 outfits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

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

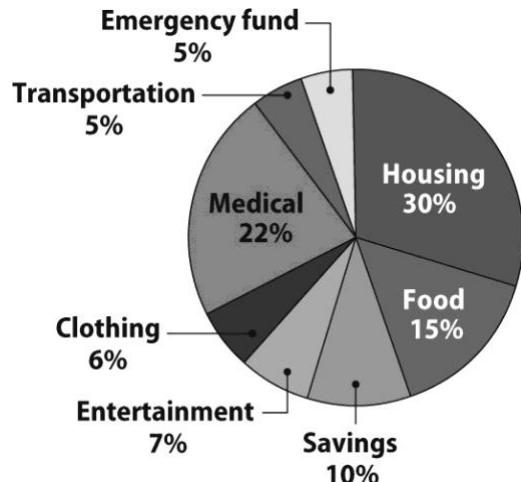


- A 128 cm² C 176 cm²
 B 152 cm² D 304 cm²
32. A middle school has 470 students. Regina surveys a random sample of 40 students and finds that 28 have cell phones. How many students at the school are likely to have cell phones?
- A 132 students C 329 students
 B 188 students D 338 students
33. Which of the following is the solution to the inequality below?
- $$-5x - 10 < 20$$
- A $x > -6$ C $x < -6$
 B $x > -2$ D $x < -2$
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 $y = 15x - 5$ C $y = 5x - 15$
 B $y = 15x + 3$ D $y = 5x + 15$

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 .



- A 30.3 in² C 39.3 in²
 B 33.0 in² D 48.3 in²
36. What is the measure of $\angle BGD$?
-
- A 40° C 90°
 B 50° D 130°
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?



- A \$250 C \$750
 B \$500 D \$1,100

47. Which of the following is **not** true?

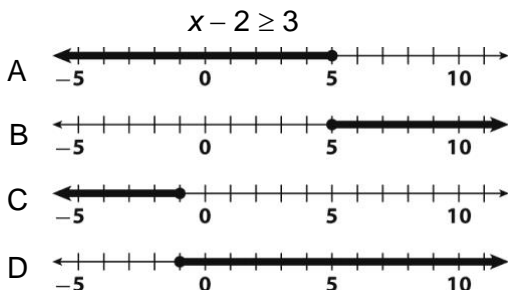
- A $5x + 6x = 70^\circ$
- B $5x + 6x < 180^\circ$
- C $5x + 6x = 110^\circ$
- D $5x + 6x + 70^\circ = 180^\circ$

48. Which equation represents the data shown in the table below?

| | | | | |
|-------------------|---|---|----|----|
| Cost (y) | 5 | 9 | 13 | 17 |
| Gallon (x) | 2 | 4 | 6 | 8 |

- A $y = 2x + 1$
- B $y = 3x - 1$
- C $y = 2.5x$
- D $y = 2.5x + 1$

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
- B 6 ft
- C 12 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 earnings \$16 per hour. How many hours per month must Mr. Demir work at his part-time job to make sure that he and Mrs. Demir have met their monthly budget?

- A 37.5 h
- B 75 h
- C 93.75 h
- D 125 h

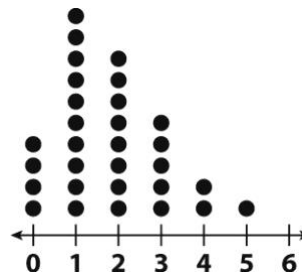
53. Chana has a bag of colored tiles. Without looking, she removes one tile, records the color, and replaces it. She repeats this process 40 times and records the results in the table.

| 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 $\frac{1}{8}$
- B $\frac{1}{4}$
- C $\frac{7}{8}$
- D $\frac{9}{10}$

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.

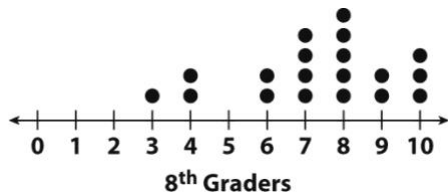
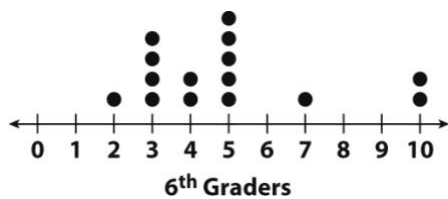
55. Aaron buys 3 ties for \$19.95 each, a belt for \$23.50, and a pair of boots for \$124.95. The sales tax in his city is 5%. To the nearest cent, what is the total cost of Aaron's purchases?

- A \$176.82
- B \$197.77
- C \$218.72
- 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?

- A 0.28
- B 0.38
- C 0.48
- 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?

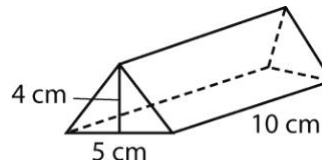


- A 3 h
- B 5 h
- C 8 h
- D 13 h

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
- B 3 hits
- C 5 hits
- D 12 hits

59. What is the volume of the prism below?



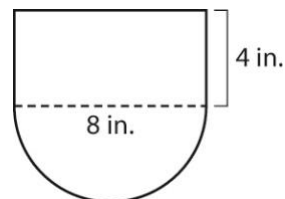
- A 100 cm³
- B 125 cm³
- C 150 cm³
- D 200 cm³

60. What is the value of x in the equation below?

$$5x - 35 = 40$$

- A -1
- B 1
- C -15
- D 15

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

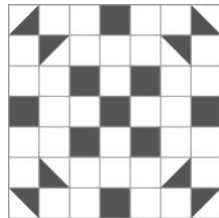


- A 57.12 in²
- B 128 in²
- C 200.96 in²
- D 328.96 in²

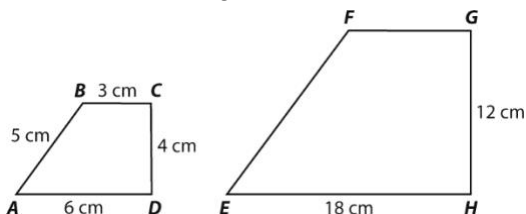
62. Mike has \$75 to spend at a local model car show. The entrance price for the show is \$20. At one seller's stand, Mike finds some model cars that he likes that are \$7.50 each. What is the maximum number of model cars that Mike can buy at that stand?

- A 6 cars
- B 7 cars
- C 8 cars
- D 10 cars

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?

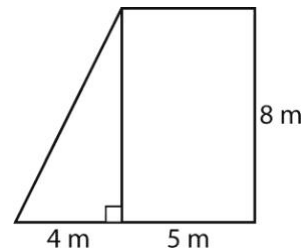


- A 26.53% C 73.47%
 B 36.11% D 276.92%
64. On a road map, the distance from Greenmount to Yorktowne is 2 inches. The map scale is 1 in.:25 mi. How many miles is the actual distance between the two cities?
- A 12.5 mi C 50 mi
 B 25 mi D 125 mi
65. The temperature in Jukkasjarvi, Sweden, was -3° at 3 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° D 12°
66. The two quadrilaterals below are similar. What is the length of \overline{EF} ?



- A 9 cm C 17 cm
 B 15 cm D 22 cm
67. The Canadian \$2 coin has a diameter of 28 millimeters. To the nearest 0.01 mm, what is the circumference of this coin?
- A 87.92 mm C 615.44 mm
 B 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
 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 $10x + 5 \geq 25$
 B $5x + 10 < 25$ D $5x + 10 \leq 25$
70. To the nearest square meter, what is the area of the figure below?



- A 32 m^2 C 56 m^2
 B 40 m^2 D 72 m^2
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?
- A $-1,782$ ft C 938 ft
 B -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?
- A 28 in. C 175 in.
 B 35.7 in. D 280 in.