

ST. MARY'S DOMINICAN HIGH SCHOOL
Algebra I and Algebra I (Honors) Summer Worksheet



Dear student: _____ (name)

The purpose of this summer worksheet is to help you practice your math skills while providing examples of ACT/PSAT-type questions. The questions were specifically chosen because they relate to topics that will be used in your math class next year or because they cover material you have learned that is on the ACT/PSAT.

In order to receive full credit for your work, be sure to follow these instructions.

- 1. Print out the worksheet (print on both sides) and SHOW ALL WORK neatly and in a concise manner next to each question– in PENCIL! All problems must have work or an explanation!**
- 2. Check your answers with the answer key provided. Review and re-try any questions you missed. If you have difficulty with any of the concepts, please review them during the summer.**
- 3. Bring your completed assignment to school on the second day of class.**

Standardized Test-Taking Tips:

- Underline or circle key numbers/words in the problem.
- Read the question that is being asked. Sometimes the answer to the question is not necessarily the solution to the equation.
- As you eliminate choices, scratch them out.

Your work will be collected, and a grade will be given based on **completeness and effort**. Try your best!!! If you need assistance, consult the video tutors available at khanacademy.org.

Sincerely,

St. Mary's Dominican Mathematics Department

**Don't forget – you must show work next to each problem!!!
If you use “Guess and Check,” show your guesswork.**

- A baker has $4\frac{2}{3}$ cups of sugar in her pantry. Each cake she bakes requires $\frac{1}{2}$ cup sugar. Which of the following is the largest number of whole cakes for which she has enough sugar in her pantry?
A. 2
B. 3
C. 8
D. 9
E. 10

2. The monthly fees for single rooms at 5 colleges are \$370, \$310, \$340, and \$310, and \$380, respectively. What is the mean of these monthly fees?
- A. \$310
 - B. \$340
 - C. \$342
 - D. \$350
 - E. \$380
3. On a particular road map, $\frac{1}{2}$ inch represents 18 miles. How many miles apart are two towns that are $2\frac{1}{2}$ inches apart on the map?
- A. 18
 - B. 22.5
 - C. 36
 - D. 45
 - E. 90
4. The first term is 1 in the geometric sequence 1, -3, 9, -27, . . . What is the seventh term of the geometric sequence?
- A. -243
 - B. -30
 - C. 81
 - D. 189
 - E. 729
5. The length of a rectangle with area 54 square centimeters is 9 centimeters. What is the perimeter of the rectangle, in centimeters?
- A. 6
 - B. 12
 - C. 15
 - D. 24
 - E. 30

6. What fraction lies exactly halfway between $\frac{2}{3}$ and $\frac{3}{4}$?
- A. $\frac{3}{5}$
 - B. $\frac{5}{6}$
 - C. $\frac{7}{12}$
 - D. $\frac{9}{16}$
 - E. $\frac{17}{24}$
7. What is the greatest common factor of 42, 126, and 210?
- A. 2
 - B. 6
 - C. 14
 - D. 21
 - E. 42
8. What is the least common multiple of 70, 60, and 50?
- A. 60
 - B. 180
 - C. 210
 - D. 2,100
 - E. 210,000
9. Kim earned an 85% on a test that had 40 questions. How many questions did she miss?
- A. 4
 - B. 6
 - C. 8
 - D. 17
 - E. 34
10. How many one-digit whole number positive factors does 18 have?
- A. 2
 - B. 3
 - C. 4
 - D. 5
 - E. 6

11. Sarah has a wooden board that is 12 **feet** long. If she cuts three **28-inch** pieces from the board, how many inches of board will she have left?
- A. 14
 - B. 28
 - C. 36
 - D. 60
 - E. 84

12. The chart below shows the total pizza slice sales for a pizza restaurant over a weekend. If pepperoni slices cost \$2.45 and cheese slices cost \$1.95, how much did the restaurant earn on Friday from pepperoni and cheese slices?

	Friday	Saturday	Sunday
Cheese	38	46	36
Sausage	43	52	47
Pepperoni	41	49	44

- A. \$174.55
 - B. \$178.00
 - C. \$179.45
 - D. \$199.45
 - E. \$207.80
13. What is 6% of 1250?
- A. 75
 - B. 150
 - C. 208
 - D. 300
 - E. 750
14. A jacket with an original price of \$160 is on sale for 15% off. What is the sale price?
- A. \$120
 - B. \$136
 - C. \$140
 - D. \$144
 - E. \$155

15. What is the difference between the mean and the median of the set {3, 8, 10, 15}?

- A. 0
- B. 1
- C. 4
- D. 9
- E. 12

16. When 40% of 60 is added to 12% of 600, the resulting number is

- A. 24
- B. 72
- C. 96
- D. 140
- E. 180

17. Maria ordered a pizza. She ate only $\frac{2}{9}$ of it and gave the remaining pizza to her three brothers. What fraction of the whole pizza will each of Maria's brothers receive if they share the remaining pizza equally?

- A. $\frac{7}{9}$
- B. $\frac{3}{7}$
- C. $\frac{1}{3}$
- D. $\frac{7}{27}$
- E. $\frac{2}{27}$

18. At Ben's school, $\frac{3}{5}$ of the seventh-grade students play a sport. There are 450 students in seventh grade. What is the total number of seventh-grade students who play a sport?

- A. 90
- B. 180
- C. 270
- D. 750

19. In $\triangle ABC$, the sum of the measures of $\angle A$ and $\angle B$ is 47° . What is the measure of $\angle C$?
Hint: The sum of the measures of the angles of a triangle is 180° .

- A. 47°
- B. 86°
- C. 94°
- D. 133°
- E. 143°

20. Hot Shot Electronics is designing a packing box for its new line of Acoustical Odyssey speakers. The box is a rectangular prism of length 45 centimeters, width 30 centimeters and volume 81,000 cubic centimeters. What is the height, in centimeters, of the box?
Hint: The formula for finding the volume of a rectangular prism is $V=lwh$.

- A. 75
- B. 60
- C. 48
- D. 27
- E. 18

21. A rectangular aquarium 3 ft. x 2ft. x 1ft. is $\frac{2}{3}$ full of water. In cubic feet, how much water is in the tank? (See hint from #20).

- A. $14\frac{2}{3}$
- B. 11
- C. $7\frac{1}{3}$
- D. 6
- E. 4

22. The rectangular backyard of a house measures 130 feet by 70 feet. If the backyard is completely fenced in, what is the length, in feet, of the fence?

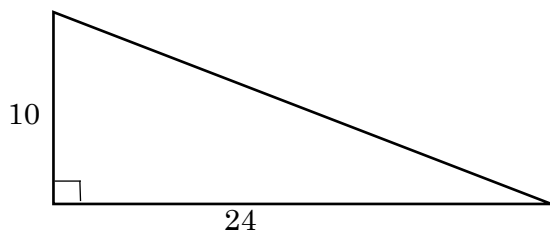
- A. 130
- B. 140
- C. 200
- D. 260
- E. 400

23. What is the perimeter of a regular hexagon with a side of length 11?
Hint: A regular hexagon has 6 sides of equal length.

- A. 33
- B. 44
- C. 66
- D. 72
- E. 96

24. What is the area, in square centimeters, of the right triangle pictured below?

- A. 432
- B. 312
- C. 260
- D. 240
- E. 120



25. If Jenny earns \$2,000 a month and spends \$600 a month on rent, what percent of Jenny's monthly earnings does she spend on rent?

- A. 25%
- B. 30%
- C. 35%
- D. 40%
- E. 45%

26. Which of the following is divisible by 5 and 7, but is NOT divisible by 10?

- A. 28
- B. 50
- C. 90
- D. 105
- E. 135

27. A room has a rectangular floor that is 15 *feet* by 21 *feet*. What is the area of the floor in square *yards*? Hint: Convert the sides of the floor to yards first!

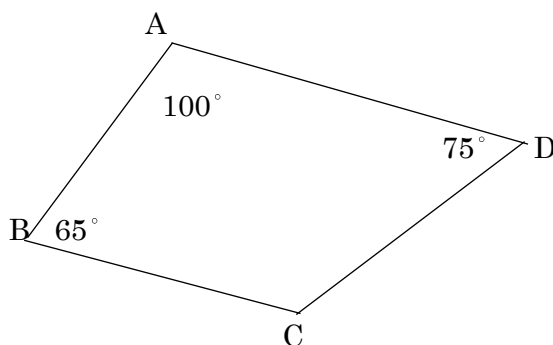
- A. 24
- B. 35
- C. 36
- D. 105
- E. 144

28. Holly has \$100 available to buy USB drives to back up data for her business computers. Each USB drive has a price of \$8, and Holly will pay a sales tax of 7% of the total price of the USB drives. What is the maximum number of USB drives Holly can buy?

- A. 11
- B. 12
- C. 13
- D. 14
- E. 15

29. The figure below shows quadrilateral ABCD. What is the measure of $\angle C$?
Hint: The sum of the measures of a quadrilateral is 360° .

- A. 120°
- B. 115°
- C. 105°
- D. 100°
- E. 80°



30. For the next school year, a college will use $\frac{1}{9}$ of the money in its operating budget for library books and $\frac{1}{6}$ of the money in its operating budget for scholarships. What fraction of the operating budget remains for other uses?

- A. $\frac{1}{18}$
- B. $\frac{5}{18}$
- C. $\frac{13}{18}$
- D. $\frac{20}{27}$
- E. $\frac{8}{9}$

Answer Key

1. D
2. C
3. E
4. E
5. E
6. E
7. E
8. D
9. B
10. D

11. D
12. A
13. A
14. B
15. A
16. C
17. D
18. C
19. D
20. B

21. E
22. E
23. C
24. E
25. B
26. D
27. B
28. A
29. A
30. C