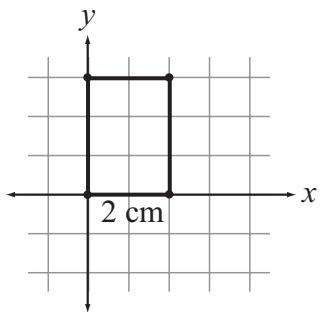


1. _____ cm²

A rectangle has a perimeter of 10 cm and a width of 2 cm. What is the number of square centimeters in its area?



2. _____

What is the product of all the positive integer factors of 15?

3. _____

When the sum of $\frac{2}{3}$ and $\frac{5}{24}$ is expressed as a common fraction, what is its denominator?

4. _____ km

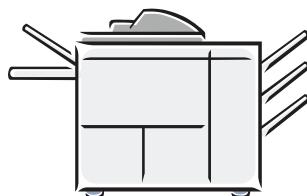
Joaquin rode his bicycle down a straight street to school. He passed the playground, then the library, and then the donut shop before arriving at school. The playground is 0.4 km from the donut shop. The library is 1.0 km from the school and 0.3 km from the donut shop. What is the distance from the playground to the school? Express your answer as a decimal to the nearest tenth.



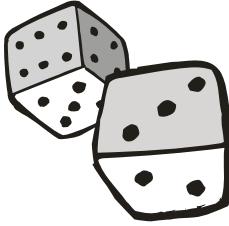
5. _____ orders

One recipe for Tex-Mex four layer dip calls for one layer each of refried beans, sour cream, guacamole and tomatoes. If the refried beans must be the bottom layer, in how many different orders can the dip be constructed?

6. _____ minutes



A Sprint copier can copy 2400 pages in 60 minutes. At this rate, how many minutes will it take for a Sprint copier to copy 120 pages?

7. _____ What is the value of $3^4 - 2^4$?
8. _____ What is the product of the largest and smallest prime factors of 165?
9. _____ Felix's test scores for the second quarter are 87, 92, 88, 90, 83, 90, 86. What is the mean of the median and the mode of these scores?
10. _____ pairs How many pairs of distinct integers chosen from the set of odd integers between 6 and 16 have a sum greater than 23?
11. _____ If you toss two standard six-sided dice, what is the probability that you will get a 3 on at least one die? Express your answer as a common fraction.
- 
12. _____ An operation \heartsuit is defined as $a \heartsuit b = a + \frac{b}{2}$. What is the value of $-8 \heartsuit 6$?
13. _____ sides If a regular polygon has a total of nine diagonals, how many sides does it have?
14. _____ The length of a rectangle is three times its width. A new rectangle is created by decreasing the length of the original rectangle by half. By what factor must the original width be multiplied, if the area remains unchanged?

15. _____ brownies

The math team at Mandelbrot Middle School earned \$273.00 by selling a combined total of 440 brownies and cookies during their math meet. If each brownie sold for \$0.75, and each cookie sold for \$0.50, how many brownies did they sell?



16. _____

A line with slope $\frac{2}{3}$ passes through the point $(1, 2)$. At what point does this line cross the x -axis? Express your answer as an ordered pair.

17. _____

If twice a number is equal to 6 more than half the number, what is the number?

18. _____



In a boutique, items were put in a showcase, and each was assigned a price for January. Each month after that, the price was 10 percent less than the price for the previous month. What is the ratio of the price of an item in April to the price of the same item in January? Express your answer as a common fraction.

19. _____ in

Giuseppe's dad is 6'0" tall and his mother is 5'4" tall.

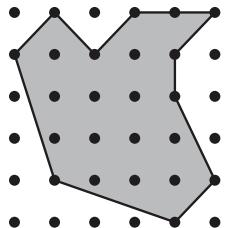
One formula used to predict a child's adult height is to take the average of the height of the parent of the opposite gender and $\frac{13}{12}$ the height of the parent of the same gender. Using this formula, what is Giuseppe's expected adult height, in inches?



20. _____

What is the ratio of the number of positive divisors of 24 to the number of positive divisors of 36? Express your answer as a common fraction.

21. _____ units²



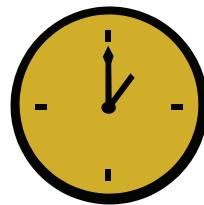
In the figure shown, the distance between adjacent dots in each row and in each column is 1 unit. In square units, what is the area of the shaded region? Express your answer as a mixed number.

22. _____ units

The numerical value of the area of a square is 36 less than three times the numerical value of its perimeter. What is the perimeter of the square?

23. _____ in

A clock's minute hand has a length of 2 in. It takes 15 minutes for the minute hand to rotate clockwise 90 degrees. What is the distance traveled by the tip of the minute hand in a 15-minute period? Express your answer in terms of π .



24. _____

The ratio of John's allowance to Bill's allowance is 3:7. The ratio of John's allowance to Mary's allowance is 2:5. What is the ratio of Mary's allowance to Bill's allowance? Express your answer as a common fraction.



25. _____ cm³

A cone has a volume of 36π cm³ and a height of 3 cm. A cylinder has a radius equal to half the radius of the cone, and a height equal to twice the height of the cone. What is the positive difference between the volume of the cone and the volume of the cylinder? Express your answer in terms of π .

26. _____ %



When a clothing store first makes an item available for purchase, the price is marked up 60% above the cost to the store. What discount can the store offer so that the discounted price is the same as the original cost to the store? Express your answer as a percent to the nearest tenth.

27. _____

If $8 - x = -2x - 8 + 5x$, what is the value of x ?

28. _____

For what value of n does $\frac{10!}{7!3!} = n!$?

29. _____

The difference of the squares of two distinct positive numbers is equal to twice the square of their difference. What is the ratio of the smaller number to the larger? Express your answer as a common fraction.

30. _____ units

The area of a particular regular hexagon is x^3 square units, where x is the measure of the distance from the center of the hexagon to the midpoint of a side. What is the side length of the hexagon?