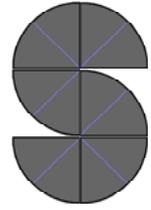


Warm-Up VR

1. _____ cm² The letter 'S' shown to the right is made up of congruent quarter-circles of radius 4cm. What is the combined area of the shaded S? Express your answer in terms of pi.



2. day John's jar contains just one marble. John adds one marble to his jar on the day 1, then two the next day, four the next day, eight the next day, and so forth, until his jar is completely filled on the 50th day. On what day is the jar half full?

3. _____ sec Avery can chop a carrot in exactly $3\frac{1}{2}$ seconds. At this rate, how many seconds will it take for her to chop 24 carrots?

4. _____ I decided to buy a pair of gloves for 13 dollars. I didn't think they were very useful but I couldn't return them so I sold them to my friend, Michael, for 14 dollars.



Soon after that my other friend, Jack, offered me 16 dollars for the gloves, so I bought them back from Michael for 15 dollars and sold them to Jack for 16 dollars. How much profit did I make?

5. _____ °C What temperature written in Celsius degrees is written using the exact same number in Fahrenheit degrees? ($F = \frac{9}{5}C + 32$).

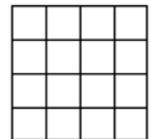


6. _____ Kevin scored a 91, an 87, and an 86 on his first three tests. What score must he receive on his next test to improve his test average to a 90?

7. _____ chords Fifteen points are equally spaced on a circle so that the measure of the arc between each pair of adjacent points is 24 degrees. Each point is then connected to every point by a segment, except that no two points are connected which are 48 degrees apart on the circle. How many chords are drawn?

8. _____ mph Paul hikes up a mountain at 12mph and comes down along the same path at 6mph. What is his average speed for the round trip?

9. _____ squares How many squares of any size can be traced along the lines of the 4 by 4 grid shown?



10. _____ My friend Frank has a jar of toothpicks. When I ask him how many he has, he tells me that if I divide the toothpicks into equal piles of 7, 8, 9, 10, 14, or 16 toothpicks, there will be three toothpicks left over. He also tells me that the number of toothpicks is the second smallest number that satisfies these conditions. How many toothpicks does he have in his jar?