

14. The perimeter of a rectangle is 51 and its area is 161. What is the value of its largest side?

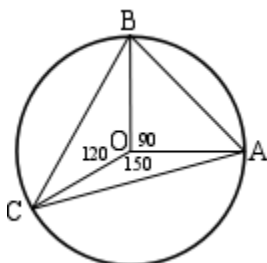


15. Express  $\frac{1}{2015} + \frac{2}{2015} + \dots + \frac{9}{2015}$  as a fraction in lowest terms.

18. It takes 10 hours for 10 identical tractors to plow a 10 hectare field. How much time (in hours) does it take one tractor to plow a one hectare field?

25. Alice selects at random a digit from the four digits 2, 0, 1, 5. Then, Bob selects at random a digit from 2, 0, 1, 5, possibly the same digit as Alice's. Suppose that Alice's selected digit is  $N$ , and Bob's selected digit is  $M$ . What is the probability that  $N - M$  is less than 3? Express your answer as a common fraction in lowest terms.

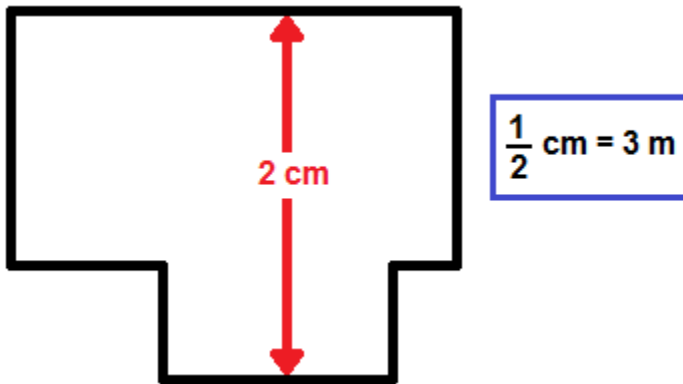
12. Points  $A$ ,  $B$ , and  $C$  are on a circle with centre at  $O$  and radius 1, dividing the circle into 3 wedges of 90, 120, and 150 degrees as in the figure below. What is the area of triangle  $\triangle BOC$ ? Express your answer as  $\frac{\sqrt{N}}{M}$  where  $N$  is a prime number and  $M$  is a whole number.



Questions taken from 2015 (Target 6, 11), and 2016 (Sprint 9, 10, 12)

6. A fence encloses a portion of a square yard by eliminating  $24m^2$  of the yard as in the sketch below. On the sketch, the side of the square is  $2cm$  long. The sketch is drawn to scale so that  $\frac{1}{2}cm$  represents  $3m$  of the fence.

What portion of the square yard was eliminated?  
Express your answer as a common fraction in lowest terms.



11. Joel walked a certain distance at rate of  $8 \frac{km}{h}$ . If he had walked the same distance at a rate of  $7.5 \frac{km}{h}$  it would have taken him 2 minutes more.  
What distance did he walk (in  $km$ )?
9. It took Dave an average of 150 seconds/question to answer the 12 questions of the math contest. How many minutes did it take him in total to answer all 12 questions of the contest?
10. A rectangle has area 35 and perimeter 24. What is the value of its largest side?
12. What is the value of  $31^2 - 29^2$ ?

Answer Key to handout pages (not to be distributed)

Page 1

14. 14

15.  $\frac{9}{403}$

18. 10

25.  $\frac{13}{16}$

12.  $\frac{\sqrt{3}}{4}$

Page 2

6.  $\frac{1}{6}$

11. 4

9. 30

10. 7

12. 120