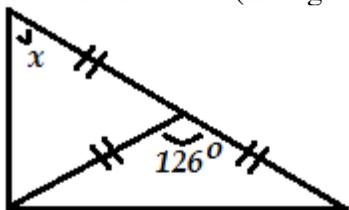


1. You toss one fair coin. What is the probability of getting a head?  
Express your answer as a common fraction. \_\_\_\_\_ 1

2. What is the digit sum of 2014? \_\_\_\_\_ 2

3. The rectangle has sides 8 and 6. What is the value of its area?  
  
\_\_\_\_\_ 3

4. You bought a ticket to a hockey game at a cost of \$80 plus 5% tax.  
How many dollars did you pay in total? \_\_\_\_\_ (\$) 4

5. The right triangle below consists of 2 isosceles triangles.  
What is the value (in degrees) of the angle  $x$ ?  
  
\_\_\_\_\_ (°) 5

6. What is the sum of the three smallest primes? \_\_\_\_\_ 6

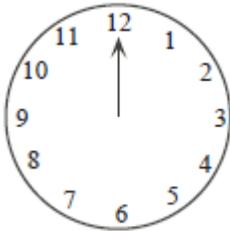
7. Round 21% of 21 to the nearest integer. \_\_\_\_\_ 7

8. Every student in a class of 20 sent an e-mail to each of the other students  
of the class. How many e-mails were sent in total? \_\_\_\_\_ 8

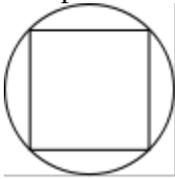
9. What fraction is 15% of 15% of 25? \_\_\_\_\_ 9

Grade Five (5) Division

10. Round  $0.2014 \times 100$  to the nearest whole number. \_\_\_\_\_ 10
11. What is the acute angle (in degrees) between the hour hand and the minute hand at 3:30? \_\_\_\_\_ 11



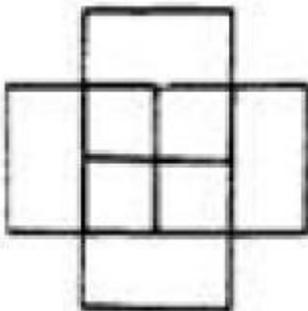
12. What is the value of  $1002 \times 998$ ? \_\_\_\_\_ 12
13. Linda's salary in 2013 went down 20% (compared with her 2012 salary). What increase (in percent) to her 2013 salary will raise her 2014 salary to a level 5% more than what she earned in 2012? Round your answer to the nearest integer. \_\_\_\_\_ (%)13
14. Let  $20 < N < 60$ . If you divide N by 5 the remainder is 2. If you divide N by 6 the remainder is 1. What is the remainder if you divide N by 7? \_\_\_\_\_ 14
15. The perimeter of the inscribed square is 40. Round the area of the circle to the nearest integer. \_\_\_\_\_ 15



16. In the summation below  $D=A+B$ . What is the value of  $A+B+C+D$ ?

$$\begin{array}{r} 2BA \\ + C6D \\ \hline 8AD \end{array}$$

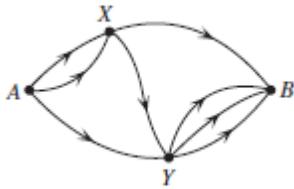
17.  $3^{11} \times 3^{2014} = 3^{N \times 27}$ . What is the value of  $N$ ? \_\_\_\_\_ 16
18. How many squares are there in the figure below? \_\_\_\_\_ 17



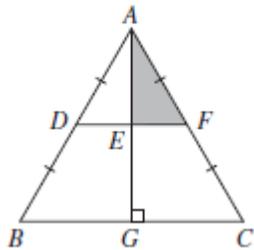
\_\_\_\_\_ 18

Grade Five (5) Division

19. What is the smallest whole number  $N$  such that  $5^N > 4000000$ ? \_\_\_\_\_ 19
20. The measures of the sides of triangle A are 5cm, 5cm and 6cm.  
The measures of the sides of triangle B are 5cm, 5cm and 8cm.  
What is the ratio of the area of A to the area of B? \_\_\_\_\_ 20
21. You traveled 4.725 km at a speed of 13.5 km/h.  
How many hours did you travel? Express your answer as a fraction. \_\_\_\_\_(h)21
22. In how many ways can you walk from Point A to point B if you must walk along the directions marked by arrows?



- \_\_\_\_\_ 22
23. Suppose that when a man is at point A (see the figure for Question 22), the probability that he walks along any of the three paths is  $\frac{1}{3}$ . If he is at point X the probability that he walks along any of the 2 paths is  $\frac{1}{2}$ . If he is at point Y, the probability that he walks along any of the three paths is  $\frac{1}{3}$ . Two men walk independently from point A to point B. What is the probability that both choose the same path? \_\_\_\_\_ 23
24. In a club, the ratio of boys to girls was  $\frac{13}{19}$ . Then, 4 more boys joined the club and now the new ratio is  $\frac{5}{7}$ . How many boys are now in the club? \_\_\_\_\_ 24
25.  $\triangle ABC$  is equilateral with side 4.  $AD = DB$ , and  $\triangle ADF$  is equilateral. What is the perimeter of  $\triangle AEF$ ? Express your answer as  $N + \sqrt{M}$  where  $N$  and  $M$  are positive whole numbers.



- \_\_\_\_\_ 25
26. Find the sum of all prime factors of  $3 \times 5 \times 2014$ ? \_\_\_\_\_ 26