

1. Find: $11 \times 3 + 7 - \frac{20}{2} - 3 \times 7 =$ _____ 1

2. Dalia is 16 years old. Her twin brothers Eric and Joe are each six years younger than Dalia. What is the average age of the three kids? _____(years) 2

3. Find: $44444 - 4444 + 444 - 44 + 4 =$ _____ 3

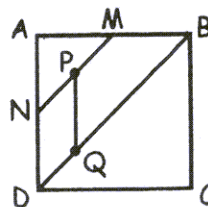
4. If the measure of one angle of a right triangle is 70° , what is the measure of the smallest angle of the triangle (in degrees)? _____($^\circ$) 4

5. A person writes the word "statistics" over and over again like this: statisticsstatisticsstatisticsstatisticsstatistics... What is the 2006-th letter that the person writes? _____ 5

6. A salesman makes a profit of 20% of the selling price of a book. What is the profit (in percents) that the salesman makes on his cost for the book? _____(%)6

7. Of 100 students, 76 have brown hair, 58 have brown eyes, and 12 have neither brown hair nor brown eyes. How many students have both brown hair and brown eyes? _____(students)7

8. $ABCD$ is a square with sides of 4 units. M and N are midpoints of AB and AD , respectively. P is the midpoint of MN . Q is on the line BD and $PQDN$ is a parallelogram. What is the area of $PQDN$?



_____ (unit²) 8

9. Mathsteal The Pirate kept for himself $\frac{5}{6}$ of the gold coins captured, and distributed the rest equally among his three crew members. If each crew member received 25 gold coins, how many coins did Mathsteal The Pirate keep? _____(coins) 9

Grade Five (5) Division

10. An athlete uses up 225 calories when she runs for 15 minutes. How many calories does she use up if she runs one hour and 20 minutes ? _____(calories) 10
11. Ms Save-It always saves 30% of her monthly salary. When her monthly income increased by 25%, her monthly saving increased by \$150. What is her monthly salary after the increase ? _____(\$) 11
12. The length of the diameter of a circle is decreased by 10%. How much does the area of that circle decrease (in percents) ? _____(%)12
13. If two standard dice are tossed, what is the probability that the sum of the numbers on the ten visible faces is equal to 32 ? Express your answer as a common fraction. _____ 13
14. The length of a circular track is 400 metres and it takes James 80 seconds to run the entire length of the track. Speedy, his dog, runs 50% faster. What is the average speed of the dog (in kilometres per hour) ? _____($\frac{km}{h}$) 14
15. Four of the following test scores are Dan's and the other four are John's: 81, 82, 83, 84, 85, 86, 87, 100. Dan's average score is 84. What is the average score of John ? _____ 15
16. Angela tosses a fair coin three times. What is the probability that she gets at least 2 heads in a row ? Express your answer as a common fraction. _____ 16
17. The Opera House is 85% full for a performance. There are 1037 people at the performance. How many empty seats are there ? _____(seats) 17
18. What is the largest possible result when a 1-digit integer is multiplied by a 2-digit integer ? _____ 18

Grade Five (5) Division

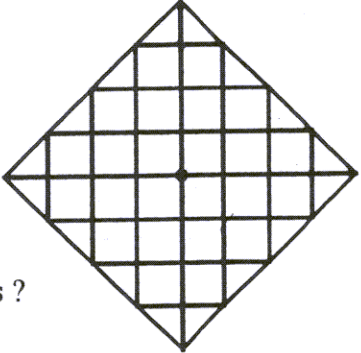
19. The teacher has 200 ribbons to give away to students who excel in math. $\frac{1}{8}$ are blue, $\frac{3}{20}$ are red, $\frac{1}{5}$ are green, and $\frac{1}{3}$ of the remainder are yellow. How many yellow ribbons does she have? _____(yellow) 19

20. Jade wrote down all the numbers from 20 to 200. How many times did she write the digit 1? _____(times) 20

21. Let $x\#y = \frac{x}{x+y}$.
If $x\#y = 9$, what is the value of $y\#x$? _____ 21

22. There are five slips of paper in a box, with the numbers 1,2,3,4, and 5 written on them. Jane removed two slips from the box. What is the probability that the decimal expansion of the product of the numbers on these two slips ends in a 0? Express your answer as a common fraction. _____ 22

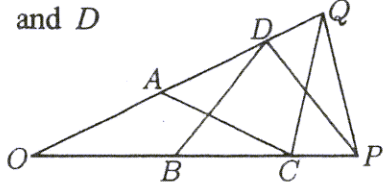
23. Each intersection point of the lines is a distance of 1 unit from its nearest neighbours horizontally and vertically. How many ways are there of walking from the centre of the figure, along lines, to a point on the outer edge of the figure, so that the walk has a total length of 4 units? Hint: the symmetry of the figure should be helpful in your calculations.



_____ (ways) 23

24. What is the remainder when 10^8 is divided by 98? Hint: consider what happens when you divide 10^2 by 98. _____ 24

25. Points B and C lie on line segment OP , and A and D lie on line segment OQ . Given that $OA = AC = CQ = OB = BD = DP$, find the number of degrees in the measure of $\angle POQ$. Express your answer as a common fraction. Hint: Use the fact that some of the triangles in the figure are isosceles. _____ (°) 25



26. What is the smallest positive integer N such that $1 + 2 + 3 + \dots + (N - 1) + N$ is a multiple of 40? Hint: $1 + 2 + 3 + \dots + (N - 1) + N = \frac{N(N+1)}{2}$. _____ 26