

5 POINTS

1. Tanya is thinking of an odd number between 30 and 60. The sum of the two digits is 9. Which of the following numbers is Tanya thinking of?
Out of all the odd numbers between 30 – 60 (31, 33, 35, ..., 59), only 45 has a digit sum of 9.
 A. 27 B. 36 C. 63 D. 81 **E. 45**

2. Tim adds all of the odd numbers from 1 to 10. What is the sum that Tim will get? *The sum of all of the odd numbers from 1 to 10: 1+3+5+7+9 = 25*
 A. 18 B. 20 **C. 25** D. 24 E. 21

3. Study the picture carefully. What number should be placed in the shaded box?
*A = 3 + 2 = 5
 B = 7 + 5 = 12
 C = 12 + 8 = 20*

		C		
		B	8	
	7	A	3	
4	3	2	1	

A. 16 B. 18 **C. 20** D. 21 E. 22

4. Ted has twice as many coins as Dominic. Dominic has three times as many coins as Jim. If Jim has only 1 coin, how many coins do the three boys have altogether?
Jim: 1 coin; Dominic: 1 x 3 = 3 coins; Ted: 2 x 3 = 6 coins → Altogether: 1 + 3 + 6 = 10 coins
 A. 5 **B. 10** C. 6 D. 9 E. 8

5. What number is covered by the star?
*2 ♥s = 4, ♥ = 2. ☺ + ♥ = 3 → ☺ = 1
 ♥ + ♦ = 5 → ♦ = 3, so ☺ + ♦ = 1 + 3 = 4*

☺ + ♥ = 3	♥ + ♦ = 5
♥ + ♥ = 4	☺ + ♦ = ★

A. 5 **B. 4** C. 3 D. 2 E. 1

6. Study the pattern below. Which one fit into the missing figure in the pattern?
*The shade on the circle moves 1 position in a clockwise position.
 The shade on the corner of the square moves 1 position in a counterclockwise position.*

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A. B. C. D. E.

7. Oliver brought 14 cookies and Annie brought 10 cookies. Don and Jessa did not bring any cookie. They all got together and shared the cookies equally among themselves. How many cookies does each kid get? *24 cookies shared by 4 kids: 24 ÷ 4 = 6 cookies.*
 A. 3 B. 4 C. 5 **D. 6** E. 8

8. Today, Nicole adds her age, her brother's age, and her sister's age and gets 17 as the sum. What would be the sum of their ages 2 years from today?
Two years from today, each person gains 2 years, so 17+2+2+2 = 23
 A. 19 B. 20 C. 22 **D. 23** E. 21

7 POINTS

9. The combination for opening a toy safe is a three-digit letter made up of different letters. How many different combinations can you make using only X, Y, and Z? *Once the first digit is used, there are 2 possibilities left. There are 3 different ways to choose the first letter, then 2 ways for the second letter. So the number of combination is 3x2 or 6. Another way: list all possible different combinations: XYZ, XZY, YXZ, YZX, ZYX, and ZXY.*

A. 6 B. 4 C. 9 D. 3 E. 5

10. Annie is contemplating to buy a nesting box. She thinks it is very neat to find boxes inside the box. The nesting box she wants to buy has four smaller boxes inside. Each one of the smaller boxes contains four even smaller boxes. How many boxes are there in total?
1 big box + 4 smaller boxes + 4 x (4 even smaller boxes) = 1 + 4 + 16 = 21
 A. 9 B. 13 C. 16 D. 20 **E. 21**

11. The total cost of a pair of socks and 4 shirts is \$91. Each shirt costs \$21. What is the cost of the one pair of socks?
*Socks + Shirt + Shirt + Shirt = \$91. Sock + \$21 + \$21 + \$21 = \$91.
 Socks: \$91 - \$21 - \$21 - \$21 = \$7.*

A. \$17 B. \$6 C. \$9 D. \$8 **E. \$7**

12. A regular pattern on a wall was created with 2 different square tiles: gray and white. Tiles were installed starting with the border around the wall. So far there were 13 gray tiles already installed. How many more gray tiles are needed to complete the wall? *On the first incomplete row from the top, we need 1 gray tile, on the second row, we need 3 gray tiles, and on the last row we need 3 gray tiles. 7 gray tiles are needed to complete the wall.*

A. 6 **B. 7** C. 8 D. 9 E. 15

13. Kyle, Finch, and Tom have a total of \$24. Finch has \$5 more than Kyle. Tom has \$8 more than Finch. How much money does Finch have?

Kyle: K	}	\$24	\$24 = K + K + \$5 + K + \$13
Finch: K + \$5			\$24 = \$18 + K + K + K
Tom: K + \$5 + \$8 or K + \$13			K = \$6 ÷ 3 = \$2; Finch: \$2 + \$5 = \$7

A. \$11 B. \$10 C. \$8 D. \$6 **E. \$7**

14. Mrs. Tedjo gave her three sons \$150 to share among themselves. The oldest son received \$15 more than each of the other two sons. How much did each of the other two sons receive? *Son A + \$15 + Son B + Son C = \$150.
 Two sons got: (\$150-\$15)/3 = \$135/3 = \$45 each, and the oldest got \$45 + \$15 or \$60.*

A. \$50 B. \$52 C. \$55 **D. \$45** E. \$48

15. A minute ago, there were 20 more people in meeting room A than in meeting room B. 6 people from meeting room A moved to meeting room B. How many more people are there in meeting room A than in meeting room B now? *20 - 6 - 6 = 8*
A. 8 B. 3 C. 6 D. 14 E. 26

10 POINTS

16. In the 'Trading' game, one can make the following exchanges:



Irene has 6 bees. How many butterflies will Irene have, when she trades all her bees for butterflies? *6 bees = 12 snails. 12 snails = 3 x 12 = 36 ladybugs. 2 ladybugs for 1 butterfly → so 36 ladybugs can be traded for 36 ÷ 2 = 18 butterflies. Since 36 ladybugs = 6 bees, then 6 bees can be traded for 18 butterflies.*

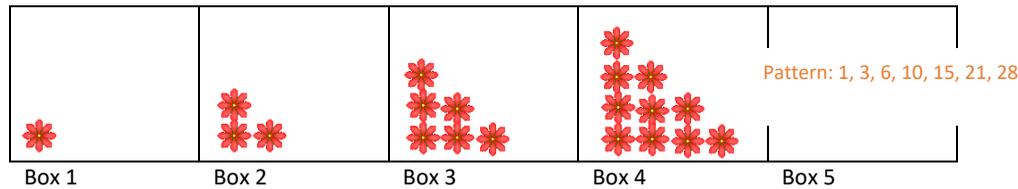
- A. 6 B. 24 **C. 18** D. 16 E. 20

17. William has two kinds of square tiles. Each small tile is 5 inches long, and each big tile is 7 inches long. He arranges all the small tiles in one row, leaving no gaps in between. He also arranges all the big tiles in another row, leaving no gaps in between. Each row covers 385 inches long surface. How many more small tiles than big tiles does William use?

To cover 385 inches, you need 385 ÷ 5 = 77 5-inch tiles, or 385 ÷ 7 = 55 7-inch tiles. 77 - 55 = 22 tiles. There are 22 more small tiles than big tiles.

- A. 20 tiles **B. 22 tiles** C. 18 tiles D. 24 tiles E. 21 tiles

18. Look at the pattern below. How many flowers should there be in the 7th box?



- A. 21 B. 24 C. 27 D. 26 **E. 28**

19. When the choir teacher divides the class into 4 students per group, there will be 3 students who will be left out. However, if she divides the class into 5 students in each group, one of the group will be short by 2 students. What is the possible smallest number of students in the choir?

The number of students is 3 more than when you count by 4. It could be 7, 11, 15, 19, 23, 27, 31, ... and so on. Since the number of students is 2 less than when you count by 5, the number could be 3, 8, 13, 18, 23, 28, 33, 38, 43, ... The number that satisfy both conditions are 23, 43, 63, and so on. The smallest possible number is 23.

- A. 15 B. 19 **C. 23** D. 28 E. 18

20. Helen and Josephine have a total of \$40. Josephine has 7 times as much money as Helen. How much money does Josephine have?



- A. \$35** B. \$38 C. \$35.50 D. \$36 E. \$36.50

MATH CHALLENGE TOURNAMENT

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Problem Solving Challenge

Grade 2

Problems 1-20

Do not begin until you are instructed to do so.

KEY

Problem Solving Challenge (40 minutes)

Mark your answers on the ANSWER SHEET.
You may use scratch paper to do any calculation to reach final answers.