

Puzzle 1

$$\begin{array}{c} \text{Switch Controller} \\ \times \end{array} \quad \begin{array}{c} \text{TV Screen} \\ = 121 \end{array}$$

$$12 \times \begin{array}{c} \text{Switch Controller} \end{array} = 132$$

$$\begin{array}{c} \text{Game Boy} \\ = 20 - \end{array} \quad \begin{array}{c} \text{TV Screen} \end{array}$$

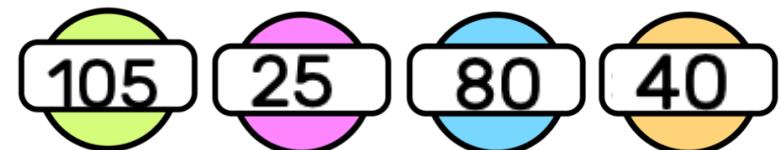
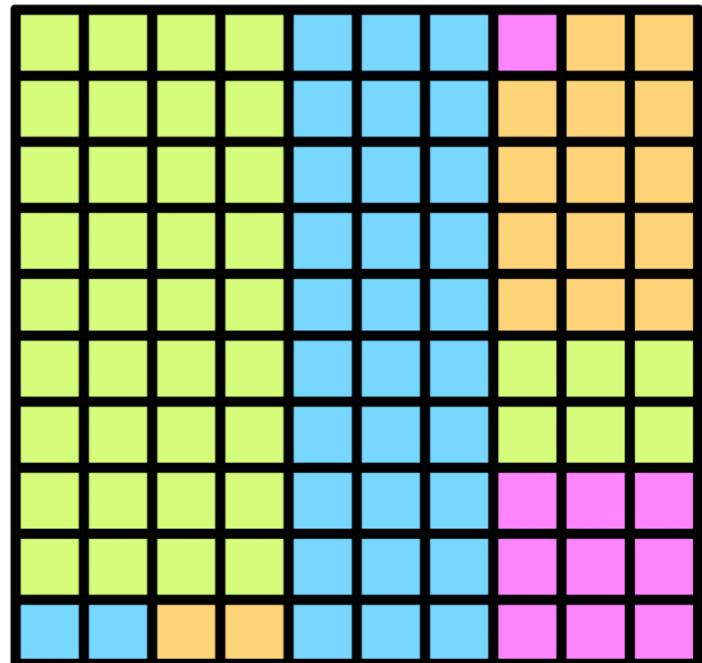
$$\begin{array}{c} \text{Controller} \\ - \end{array} \quad \begin{array}{c} \text{Game Boy} \\ = 7 \end{array}$$

$$\begin{array}{c} \text{Switch Controller} \\ \times \end{array} \quad \begin{array}{c} \text{Controller} \\ = ? \end{array}$$

$$? = 176$$

Puzzle 2

If the diagram below represents 250, find the value of each color.



Puzzle 3

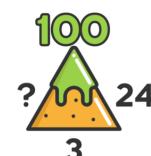
There are 20 people in a room.

If they shake each other's hands once and only once, how many handshakes are there all together?



190 handshakes ($19+18+17+16+\dots+3+2+1=190$)

Use the pattern below to find the value of the ?



? = 28 (multiply the right by the bottom, then add the left)

Family Math Night : Problem Solving Round

NAME: _____

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1.Arthur scored 258 points at a carnival game. Joel scored 84 more points than Arthur and 68 more points than Ruth. How many points did the three children score in all? **874** points

Answer: _____

2.I am thinking of a four-digit number. When I add all the digits, the sum is 17. What is the smallest possible number?

(Do not begin the number with the digit "0")

1,079.

Answer: _____

3.Dennis wrote all the numbers from 300 to 400 on a notebook. How many times did he write the digit "3"

120 times

Answer: _____

4.Elsa and Mary collected a total of 20 empty bottles. For every 2 bottles Elsa collected, Mary collected 3. How many empty bottles did each girl collect?

Elsa: 8 empty bottles

Mary: 12 empty bottles

Answer: _____

5.Gregory has 480 stamps. Steven has 260 stamps. How many stamps must Gregory give to Steven so that they have the same number of stamps? How many stamps will each of them have after sharing?

Gregory must give Steven **110** stamps.

Each of them will have **370** stamps after sharing.

Answer: _____

6.There are 30 trees along a straight road. Any two neighboring trees are 10m apart. What is the distance between the third tree and the third last tree?

250 m.

Answer: _____

7.String P is twice as long as string Q. After 75cm of string P is cut off, string P is half as long as string Q. What is the total length of both strings at first?

150 cm

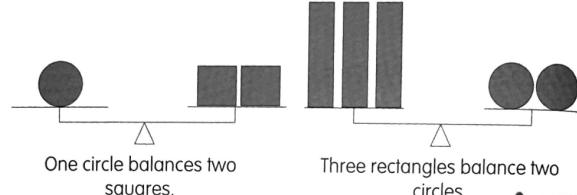
Answer: _____

8.Each circle weighs 90g.

(a) What is the mass of the square?

(b) What is the mass of the rectangle?

(c) How many squares and rectangles will balance both sides of the scales?



Answer: (a) **45 g.** (b) **60 g.** (c) **3 rectangles**

9.One can and two bottles of Fizzy Pop have a total capacity of 410mL. Two cans and one bottle of Fizzy Pop have a total capacity of 370 mL. Find the capacity of

(a) one can of Fizzy Pop

(b) one bottle of Fizzy Pop

Answer: (a) **110 mL.** (b) **150 mL.**

10.One mango and one pear cost \$3.30. Two mangoes and five pears cost \$9.00. How much does one mango cost?

\$2.50.

Answer: _____

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1. The sum of all the digits of a 4-digit number is 16. The digit in the ones place is equal to the digit in the thousands place. The digit in the hundreds place is twice the digit in the hundreds place. What are the possible numbers?

Answer: 4,264 and 6,316

2. I am thinking of two numbers. Their sum is 1,544 and their difference is 152. What are the two numbers?

Answer: 696 and 848

3. Phil had 3 times as much money as Anne. After Phil gave \$285 to Anne, he had twice as much money as she did. How much money did Phil have at first?

Answer: \$2,565

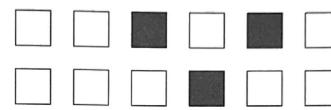
4. The figure below shows 18 squares.

 1 more square

5 squares are shaded.

Answer: _____

If two-third of the squares are to be left unshaded, how many more squares need to be shaded?

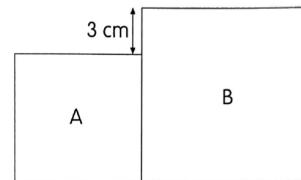


5. The figure is made up of two squares, A and B.

Answer: 225 cm²

The perimeter of square B is 48 cm.

What is the area of the entire figure?



6. A rectangular container, measuring 25 cm by 21 cm by 18 cm, is filled with three-fifth filled with water. How much more water can it hold? Give your answer in liters and milliliters.

(1 liter = 1,000 cubic cm)

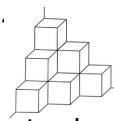
Answer: 3 L 780 mL

7. What is the maximum number of cubes of sides 3 cm that can be cut from a wooden block that measures 36 cm by 21 cm by 12 cm?

Answer: 336

8. The solid figure on the right is formed by stacking some cubes together.

How many unit cubes are used to form the solid figure?



10 unit cubes

Answer: _____

9. Leon and Joel had the same number of stamps. After Joel gave away 28 stamps and Leon sold 150 stamps, Joel had 3 times as many stamps as Leon. How many stamps did Leon have at first?

Answer: 211 stamps

10. Each of the following figures is made up of triangles

(a). How many triangles are there in Figure 4?

(b). How many triangles are there in Figure 10?



Figure 1



Figure 2

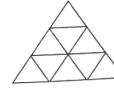


Figure 3

Answer: (a) 16 (b) 100

Grade - 4

Family Math Night : Problem Solving Round

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1. Mrs. Jones has 33 coins. She gives them out one at a time to Ann, Beth, Corinne, Denise, and Ethel, who are seated around a table. She gives the first coin to Ann, the second coin to Beth, and so on until all the coins are given out. Who does she give the last coin to?

Answer: Corinne.

2. How many 4-digit numbers can be formed using the digits 0, 1, and 2?

Answer: 54

3. How many pairs of whole numbers have a sum of 43? Out of these pairs, how many of them have a difference of 17?
One pair of whole numbers (30 and 13) has a difference of 17.
22 pairs have a sum of 43.

Answer: _____

4. A balanced scale has a bag of sugar on its right pan. On its left pan, it has a bag of salt and a two-third kg weight. The bag of salt is two-third of the mass of the bag of sugar. What is the mass of the bag of sugar?

Answer: 2 kg.

5. Richard spent three-fourth of a sum of money and gave away three-fourth of the remainder. He had \$6 left. How much did he have at first?

Answer: \$96

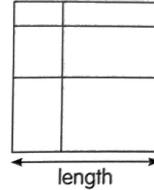
6. A ball is dropped onto the floor from a height of 128 cm. It rebounds to half of the height from where it was dropped, and this carries on for each subsequent rebound. How many centimeters has the ball covered by the time it hits the floor for the fourth time?

Answer: 352 cm

7. The perimeter of a rectangle is 62 cm. Its length is 18 cm. What is its area?

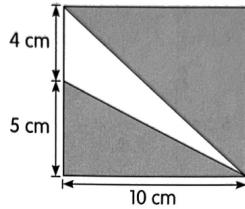
Answer: 234 cm²

8. The figure shows a square made up of 6 rectangles. If the total perimeter of all 6 rectangles is 180 cm, find the area of this square.



Answer: 324 cm².

9. What is the area of the shaded region?



Answer: 70 cm².

10. Two calculators and four batteries cost \$33. Three calculators and two batteries cost \$40.50. What is the cost of one battery?

Answer: \$2.25.

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- 1.(a) Find the value of $3p + 4q$ when $p = 4$ and $q = 3$.
(b) If $p = 4$ and $3p + 4q = 36$, what is the value of q ?

Answer: (a) $3p + 4q$ is 24
Answer: (b) q is 6.

- 2.Lemuel sold 48 notebooks in 3 days. Each day he sold 2 more notebooks than what he sold the previous day. How many notebooks did he sell each day?

Lemuel sold 14 notebooks on the first day, 16 notebooks on the second day, and 18 notebooks on the third day.

Answer: _____

- 3.Gerald and Lisa went shopping with a total of \$288. Gerald spent two-fifth of his money and Lisa spent \$36. Gerald found that the amount he had left was one-third of the amount Lisa had left. How much did Lisa have at first?

Answer: \$198

- 4.The Metric Awareness Week in 1964 was attended by 10,000 people. The 30th anniversary of the Metric Awareness Week in 1994 was attended by 1,000,000 people. What percent increase does it represent?

Answer: 9900%

5. The ratio of the number of Josh's stamps to Bob's was 4:5. After Josh received another 18 stamps from his father, he had twice as many stamps as Bob. How many stamps did Josh have at first?

Answer: 12 stamps

6. Joseph had the same amount of money as Martha. After Joseph spent \$36 and Martha spent \$12, the ratio of the amount of money Joseph had to the amount of money Martha had was 1:4.How much money did each of them have at first?

Answer: \$44

7. The ratio of Sue's mother's age to Sue's age is 2:1. If their combined age is 63 years, what will be their combined age when Sue reaches the current age of her mother?

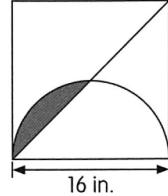
Answer: 105 years.

8. Town X and Town Y are 825 km apart. Christen drives from Town X to Town Y at 65 km/h. At the same time, Penelope drives from Town Y to Town X at 75 km/h. How far apart will they be after 3 hours?

Answer: 405 km

- 9.The figure shows a semicircle in a square.

What is the area of the shaded part? (Take $\pi = 3.14$)



Answer: 18.24 in.²

- 10.When Jose stands on a chair of height 30 cm and Allison stands on a stool, Jose is 65 cm taller than Allison. When both of them stand on the floor, Jose is 70 cm taller than Allison. What is the height of the stool?

Answer: 35 cm.