



PRIMARY 5 (GRADE 5) 2021 CONTEST PAPER

NAME: _____

Index Number: _____

SCHOOL: _____

INSTRUCTIONS:

1. Please **DO NOT OPEN** the contest booklet until the Proctor has given permission to start
2. TIME: **1 hour 30 minutes**.
3. There are 25 questions with 100 total points:
Section A: Questions 1 to 15 score 3 points each, no points are deducted for an unanswered or wrong answer.
Section B: Questions 16 to 25 score 5 points each, no points are deducted for an unanswered or wrong answer.
Section C: Questions 21 to 25 score 6 points each, no points are deducted for an unanswered or wrong answer.
4. Shade your answers neatly using a **2B lead pencil** in the Answer Entry Sheet.
5. PROCTORING: No one may help any student in any way during the contest.
6. No electronic devices capable of storing and displaying visual information are allowed during the course of the exam. Strictly **No Calculators** are allowed.
7. All students must write and shade their **Name, School and Index Number** in the Answer Entry Sheet and Contest booklet.
8. MINIMUM TIME: Students must stay in the exam hall for at least 1 hour.
9. A student must show detailed working and transfer answers to the Answer Entry Sheet.
10. **No exam papers and written notes can be taken out by any contestant.**



ROUGH WORKING

Section A: 15 Multiple Choice Questions

3 points each

Question 1

There are three numbers, $\frac{1}{3}$, $\frac{1}{4}$, and $\frac{1}{5}$. $\frac{1}{3}$ is one-third more than $\frac{1}{4}$, $\frac{1}{4}$ is one-fourth less than $\frac{1}{5}$. Which of the following is true about $\frac{1}{3}$ and $\frac{1}{5}$?

- A. $\frac{1}{3}$ is three-fourths of $\frac{1}{5}$
- B. $\frac{1}{3}$ is the same as $\frac{1}{5}$
- C. $\frac{1}{3}$ is four-thirds of $\frac{1}{5}$
- D. $\frac{1}{3}$ is one-twelfth of $\frac{1}{5}$
- E. $\frac{1}{3}$ is one-seventh of $\frac{1}{5}$

Question 2

A bag of letter blocks is arranged into a rectangular shape that is 18 blocks long and 8 blocks wide. If they are all arranged into a square shape, what is the width of the square?

- A. 36 blocks
- B. 25 blocks
- C. 8 blocks
- D. 12 blocks
- E. 64 blocks

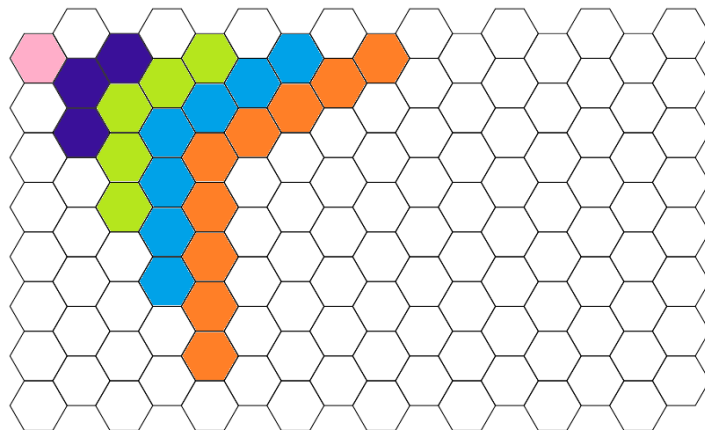
Question 3

Three-sevenths of a number is 60. What is two-fifths of the number?

- A. 65
- B. 78
- C. 56
- D. 24
- E. 37

Question 4

Harvey was coloring a growing pattern on a large sheet of paper with small hexagons. He started from the upper left corner with one hexagon and then three hexagons, and so on. He was able to complete five steps before taking a rest, as shown in the picture. If he is able to complete the sixth step, how many small hexagons will he have colored in total?



- A. 24
- B. 30
- C. 32
- D. 36
- E. 64

Question 5

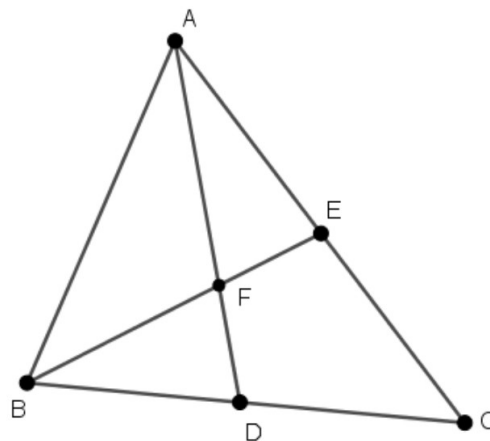
What is the product of all the natural numbers that divide evenly into ten?

(Natural numbers are whole numbers.)

- A. 100
- B. 60
- C. 120
- D. 50
- E. 48

Question 6

How many triangles, of all sizes, are there in the following figure?



- A. 5
- B. 7
- C. 8
- D. 4
- E. 6

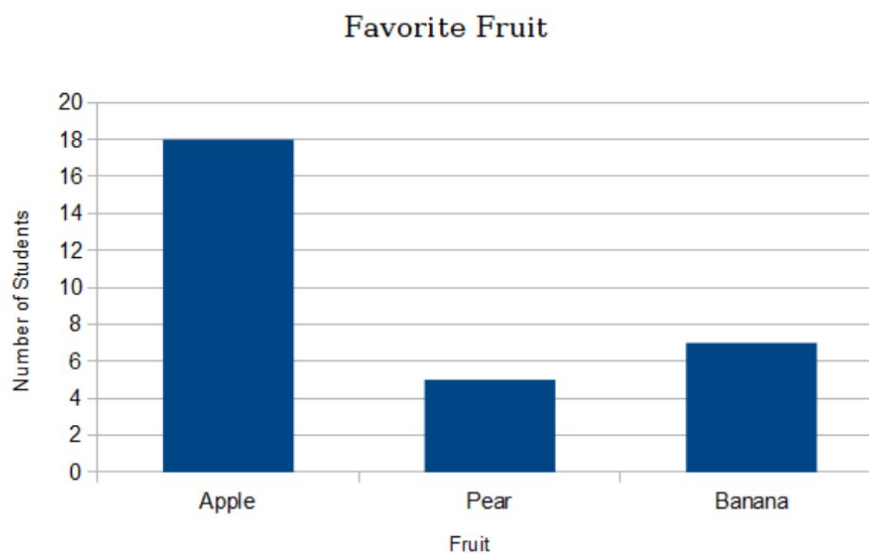
Question 7

Katie has five different shirts, six different skirts, and five different hats, and four different pairs of shoes. In how many ways can she dress herself if we do not include other things?

- A. 50
- B. 5654
- C. 20
- D. 600
- E. 60

Question 8

Jake did a short survey of his classmates about their favorite fruit and made the following chart. Everybody took his survey. What percent of his classmates like apples?



- A. 18%
- B. 36%
- C. 60%
- D. 75%
- E. 80%

Question 9

Linda uses a passcode for her smartphone, which has four digits. Each digit is one of the 10 digits from $\{0, 1, 2, 3, 4, 5, 6, 7, 8, 9\}$. How many choices does she have for her passcode?

- A. 1000
- B. 40
- C. 10000
- D. 100
- E. 400

Question 10

The average of three numbers is 16. When one of the numbers is changed to four, the average becomes ten. What is the original value of the changed number?

- A. 78
- B. 40
- C. 22
- D. 20
- E. 26

Question 11

John says, "If you triple my age and then add five, you will get 38." What is John's age?

- A. 21
- B. 12
- C. 11
- D. 10
- E. 13

Question 12

Matt has a small fish tank that has one gallon of water in it. It loses three-tenths of the water every month. Now Matt is out of town and cannot refill the tank. How many months does it take for the tank to lose more than one-half of its water?

(A gallon is a unit of measurement of liquid capacity in the United States.)

- A. One month
- B. Two months
- C. Three months
- D. Four months
- E. Five months

Question 13

The product of two natural numbers is 65. We know that both numbers are greater than one. What is the sum of the two numbers?

- A. 12
- B. 15
- C. 16
- D. 18
- E. 20

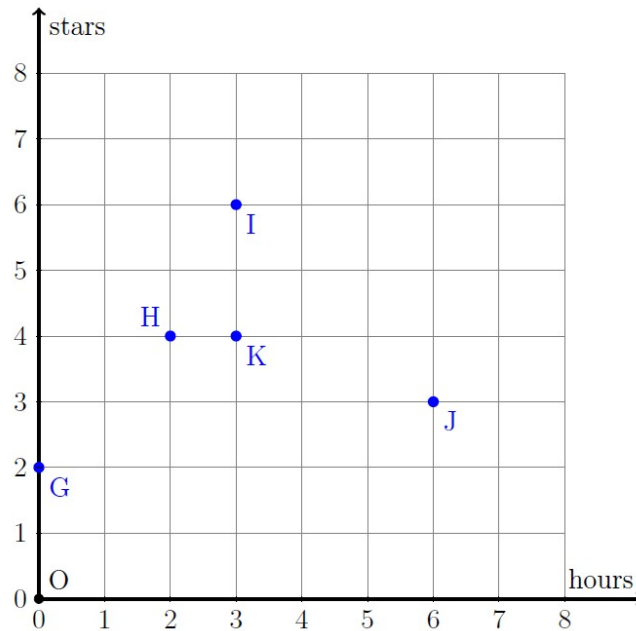
Question 14

Bill is playing with numbers. He uses all the three digits in $\{7, 2, 5\}$ to make a three-digit number. What is the difference between the largest number and the smallest number he can make?

- A. 450 dollars
- B. 495 dollars
- C. 512 dollars
- D. 252 dollars
- E. 315 dollars

Question 15

Hailey is making special paper stars for a school project. She can make 2 stars per hour. Which of the points in the following figure represents the number of stars Hailey made after three hours?



- A. G
- B. H
- C. I
- D. J
- E. K

Section B: 5 Open-ended Questions

5 points each

Question 16

What is the sum of all the whole numbers between 1 and 100 that are multiples of three?

Your Answer:

Question 17

What is the sum of ?

Your Answer:

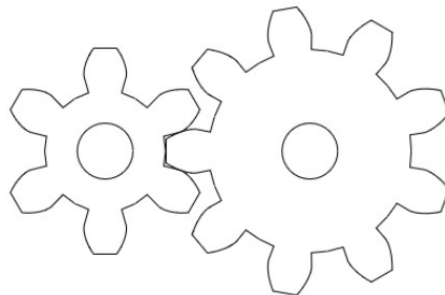
Question 18

For a special event, an online store reduced the price of a toy car by 25%, selling for \$24. What was the original price of the toy car in dollars?

Your Answer:

Question 19

Two gears are turning at the same time in the figure shown below. At a certain time, the small gear has made 60 turns. How many turns has the big gear made at that time?



Your Answer:

Question 20

In the xy -plane, a turtle is currently at the point $(-1, 2)$. There is a worm at point $(3, -1)$. The turtle can only move horizontally or vertically along the grid one step at a time. One step is one unit. How many steps does the turtle have to walk to get to the worm as soon as possible?

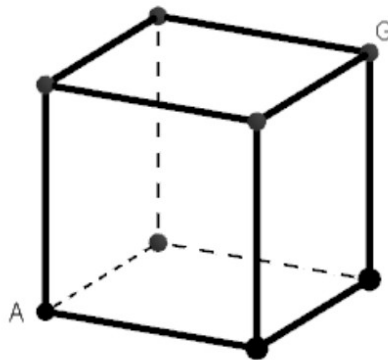
Your Answer:

Section C: 5 Open-Ended Questions

6 points each

Question 21

A spider is currently at point A on a cube shown in the figure below. There is a bug at point G. The spider needs to get to the bug as soon as possible along the edges of the cube. In how many ways can the spider get to the bug?



Your Answer:

Question 22

Mary has a bag of colored marbles. She is told that one-fifth of the marbles are red, one-third are blue, and the rest are green. She found that there are 14 green marbles. How many red marbles are in the bag?

Your Answer:

Question 23

The average of three different whole numbers is 14. The smallest is two less than the middle number; the largest is ten more than the smallest number. What is the largest number?

Your Answer:

Question 24

Jason has a box of flower stickers. The number is between 10 and 40. When he counts by five, he has four left. When he counts by three, he has two left. How many flower stickers does Jason have in the box?

Your Answer:

Question 25

A certain type of hand sanitizer can kill $\frac{1}{3}$ of the germs after one use. It has the same power when used repeatedly. Let x be the percentage of the germs that will be killed after two applications. What is x ?

Your Answer:
