

ACCORD
EDUCATION

Math Matters

November 2015

Important!
Please read before starting the test.



- Do not open the exam booklet until told so.
- You may use pencil and scratch paper for rough work.
- You have 30 minutes to solve 15 problems.
- Problems are marked as 1 pt. or 2 pts.
- All answers are integers between 0 and 9. Please fill-in answers in the corresponding circles on your answer sheet.
- You are not allowed to use calculators.
- You may keep this exam booklet with you.

1

1 pt.

$$2 + 0 \times 1 \div 5 = ?$$

2

1 pt.

$$\frac{2+10+18+24}{1+5+9+12} = ?$$

3

1 pt.

How many even numbers are there between 21 and 31?

4

1 pt.

If today is Saturday, how many days after today will be Friday for the first time?

5

1 pt.

Two angles of a triangle measure 85° and 86° . What does the third angle measure in degrees?

6

1 pt.

The difference between $\frac{1}{4}$ of 12% of a number and $\frac{1}{20}$ of 20% of the same number is 0.08. What is this number?

7

1 pt.

How many prime numbers less than 11 can be written as a sum of two prime numbers?

8

1 pt.

$n!$ means the product of whole numbers 1 through n .

For example: $4! = 1 \times 2 \times 3 \times 4 = 24$

Evaluate $\frac{7!+6!}{6!}$

9

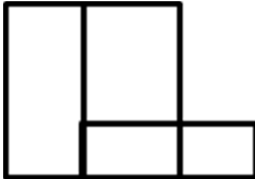
1 pt.

What is the remainder when 1313131327 is divided by 13?

10

1 pt.

How many rectangles are there in the figure?



11

2 pts.

The ratio of the perimeter of a rectangle with whole number side lengths to its area is $\frac{13}{21}$. What is the length of the shorter side of this rectangle?

12

2 pts.

Tara bought some pencils spending \$2.59 in total. Each pencil cost the same price and the number of pencils Tara bought was less than the price of each pencil in cents. How many pencils did Tara buy?

13

2 pts.

What is the millions digit of
 $1234^2 + 1234 \times 8766$?

14

2 pts.

p and q are prime numbers. $p < q$.
 $p \times q - p - q = 59$
What is the smallest value of $q - p$?

15

2 pts.

What is the units (ones) digit of 2^{2015} ?
(2^{2015} is the product of 2015 2's)