## Grade 7 Provincials Question 1

A rectangular wooden prism is made up of three pieces, each consisting of four cubes of wood glued together. Which of the pieces below has the same shape as the darkest piece?

(A)

(B)

C)

(E)

(D)


## Grade 7 Provincials Question 2

Which of the points positioned on the number line best represents the value of $\mathrm{S} \div \mathrm{T}$ ?

$P ? \quad T ? \quad Q ? \quad R ? \quad U ? \quad S$ ?

## Grade 7 Provincials Question 3

There were 5 parrots in the cage.
Their mean (average) price was $\$ 6000$.
One day during the cleaning of the cage, the most beautiful parrot flew away.
The mean (average) price of the remaining four parrots was $\$ 5000$.

What was the price of the parrot which escaped?


## Grade 7 Provincials Question 4

The year 2012 has long since passed; But as a number, 2012 will last and last.
It's made up of factors, more than just two;
But figuring how many, we leave up to you.
If a twoonie for each factor into your hand should fall.....

How much money would you have at the end of it all?
> Use only positive factors.
> Hint: 503 is a prime number.

# Grade 7 Provincials Question 5 

In a magic square, all rows, columns, and diagonals have the same sum.
The magic square shown below uses each of the integers from ${ }^{-6}$ to ${ }^{+2}$.

What is the value of $y$ ?


# Grade 7 Provincials Answer Key 

## 1. <br> A

## 2. <br> R

3. 10000
4. 12
5. -1

## Grade 8 Provincials Question 1

$>$ Beatrix is twice the height of Violet.
$>$ Violet is $\frac{2}{3}$ the height of Georgia.


What fraction of Georgia's height is Beatrix's height?
A) $\frac{9}{7}$
B) $\frac{2}{3}$
C) $\frac{4}{3}$
D) $\frac{5}{4}$
E) $\frac{3}{2}$

## Grade 8 Provincials Question 2 <br> 

To encourage his son in the pursuit of mathematics, a math professor offered to pay his son $\$ 8$ for every equation correctly solved and fine him $\$ 5$ for every incorrect solution. At the end of 26 problems, neither owed any money to the other.

How many problems did his son get correct?

# Grade 8 Provincials Question 3 

A piece of string fits exactly once around the perimeter of a square whose area is 144.

Rounded to the nearest whole number, the area of the largest circle that can be formed from the piece of string is between which interval?

A) $140-150$
B) $1640-1660$
C) $730-740$
D) $450-460 \quad$ E) $180-190$

## Grade 8 Provincials Question 4

Squares $A B C D$ and $E F G H$ are equal in area.
Vertices $B, E, C$, and Hlie on the same straight line.
Diagonal $A C$ is extended to $J$, the midpoint of GH.

What fraction of the entire diagram is shaded?

A) $\frac{5}{8}$
B) $\frac{1}{3}$
C) $\frac{2}{5}$
D) $\frac{5}{16}$
E) $\frac{3}{8}$

## Grade 8 Provincials Question 5

Andrea has a six day work shift on an off-shore rig. Her job is to inspect valves. She has just completed the third day.
If she has completed $3 / 7$ of the expected workload of 168 valve inspections, how many valves per day must she average for the remainder of her stint?

Note: average refers to "mean".

# Grade 8 Provincials Answer Key 

Problem 1: $\quad \frac{4}{3}$ or $1 \frac{1}{3}$ or $C$

Problem 2: 10

Problem 3: $180-190$ or $E$

5
Problem 4:
16

Problem 5: 32

# Grade 9 Provincials Question 1 

Nathalie has some quarters, dimes and nickels.

The ratio of the number of quarters to the number of dimes to the number of nickels that she has is $9: \mathbf{3 : 1}$.


The total value of these coins is $\$ 18.20$. How many coins does Nathalie have?

## Grade 9 Provincials Question 2

In the diagram, a circle is inscribed in a large square and a smaller square is inscribed in the circle.
( If needed, use 3.14 for pi.)


If the area of the large square is 36 , what is the area of the smaller square?
(Round answer to nearest whole number)

## Grade 9 Provincials Question 3

Mike has two containers. One container is a rectangular prism with width 2 cm , length 4 cm , and height 10 cm . The other is a right cylinder with radius 1 cm and height 10 cm . Both containers sit on a flat surface. Water has been poured into the two containers so that the height of the water in both containers is the same. (Use 3.14 for pi)


If the combined volume of the water in the two containers is $80 \mathrm{~cm}^{3}$, the height of the water in each container is closest to: $\qquad$ ?
(Round answer to nearest tenth of a cm.)

## Grade 9 Provincials Question 4

In the diagram, ABCD is a square with area $25 \mathrm{~cm}^{2}$. If PQCD is a rhombus with area $20 \mathrm{~cm}^{2}$, the area of the shaded region, in $\mathrm{cm}^{2}$ is:


## Grade 9 Provincials Question 5

## What value of n will make the following equation true?

$$
n+n^{2}+\sqrt{n}=1338
$$

# Grade 9 Provincials ANSWERS 

1. 91
2. 18

$$
\text { 3. } 7.2
$$

$$
\text { 4. } 11
$$

$$
\text { 5. } 36
$$

