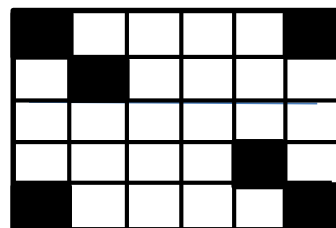Individual Round - Grade 8

Name: _____ Team # _____ School: _____

_____1. $1 + \frac{1}{2} + \frac{1}{4} + \frac{1}{8} = ?$

_____2. David drove the first 18 km of his 54 km drive to Marmora when he stopped for a juice break. What fraction of his overall trip is left for him to complete?

_____3. In the diagram, each small square in the grid is the same size. What percent of the grid is shaded?

_____4. What number is B?   $(5 \times 1) + (5 \times 2) + (5 \times 3) + (5 \times 4) = 5 \times B$

_____5. In $\triangle$ ABC, $\angle$B = 72°. What is the sum, in degrees, of the other two angles?

_____6. Write $6\frac{3}{7}$ as an improper fraction in the form $\frac{A}{B}$. What is A + B?

_____7. The results of a survey of the hair colour of 500 people are shown in this circle graph. How many people have black hair?

Gray 15%
Black
Brown 45%
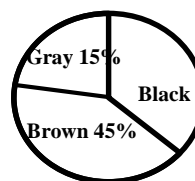
_____8. Nolan jarred 8 litres of jam after 2 days. How many days did Nolan spend making jam if he jarred 20 litres of jam? Assume the relationship is directly proportional.

_____9. A rectangular prism has a volume of 186 cm³. The area of the base is 31 cm². What is its height?

_____10. Which of number is the largest odd integer that contains the digit 5, is divisible by 3, and lies between $12^2$ and $13^2$?

_____11. Find the sequence and fill in the blanks  (2, 1), (4, 4), (6, 9), (8, 16), (__, __) What are the 2 numbers in the 5th group?

_____12.  Fred weighs half as much as Frank, and Finnigan weighs three times as much as Fred. Together, they weigh 720 pounds. How much does Finnigan weigh?

_____13. How many positive integers less than 400 can be created using only the digits 1, 2 or 3, with repetition of digits allowed?

Name: _____ Team # _____ School: _____

_____14.   A student may pay $1.50 for a single bus ticket or $5.75 for a package of 5 tickets. If a student requires 40 tickets, how much does she save by buying all of the tickets in packages of 5 rather than buying 40 single tickets?

_____15.  The numbers 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13 are written on separate cards and placed face down on a table. A card is chosen at random and flipped over. What is the probability that the number on this card is a prime number?

Individual Round - Grade 8

Name: _____ Team # _____ School: _____

1. 15/8    2. 2/3    3. 20%    4. 10    5. 108    6. 52    7. 200
8. 5    9. 6    10. 165    11. (10, 25)    12. 360    13. 39    14. $14
15. 5/11

**11.**    **(10, 25)**

**Solution:**
**Leading number sequence is 2, 4, 6, 8, 10**
**The 2nd number sequence is 1, 4, 9, 16, 25**

**14.** **If the student were to buy 40 individual tickets, this would cost 40 × $1.50 = $60.00. If the student were to buy the tickets in packages of 5, she would need to buy 40 ÷ 5 = 8 packages, and so this would cost 8 × $5.75 = $46.00. Therefore, she would save $60.00 − $46.00 = $14.00.**

**15.** **Of the given 11 numbers, the numbers 3, 5, 7, 11 and 13 are prime. (4, 6, 8, 10 and 12 are not prime, since they are divisible by 2, and 9 is not prime since it is divisible by 3.) Therefore, 5 of the 11 numbers are prime. Thus, if a card is chosen at random and flipped over, the probability that the number on this card is a prime number is 5/11 .**