Whatcom County Math Championship – 2019
Algebra – 4th Grade

1. What is the sum of the factors of 60?

2. If a number plus twice the number is 12 more than the original number, what is that number?

3. What is the sum of the even numbers from 2 to 100?

4. What is the greatest common divisor of 180 and 252?

5. What is the sum of the factors of the first three composite numbers?

6. A Lucas sequence of numbers is a sequence so that a term is the sum of the previous two terms (for example: 4, 7, 11, 18, 29…). If a Lucas sequence starts 5, ___, ___, ___, 46, what is the middle term?

7. Nich is watching a 24-minute video at 1.5 speed. How long will it take for Nich to watch the video?

8. I am a 3-digit number and all of my digits are odd. The sum of my digits is equal to 17, and my hundreds digit is three times my ones digit. What number am I?

9. What fraction is halfway between 1/3 and 3/4 on a number line? **Write the answer as a reduced fraction.**

10. Hot dogs are sold 10 per pack, while hot dog buns are sold 8 per pack. Each bottle of mustard can be used for 24 hot dogs. What is the smallest number of hot dogs that you buy so there are the same number of servings each?

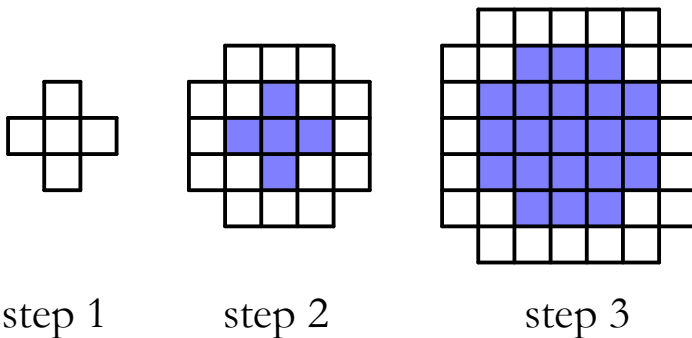# Whatcom County Math Championship – 2019
Algebra – 5ᵗʰ Grade

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7. Hot dogs are sold 10 per pack, while hot dog buns are sold 8 per pack. Each bottle of mustard can be used for 24 hot dogs. What is the smallest number of hot dogs that you buy so there are the same number of servings each?

8. Let @n is the sum of the factors of n (for example, @6 = 1 + 2 + 3 + 6 = 12). What is the smallest whole number m such that @m is larger than 2m?

9. What is the sum 7 + 10 + 13 + … + 244?

10. A pair of numbers have a sum of 21 and a product of 108. What is the positive difference of the pair?

Whatcom County Math Championship – 2019
Algebra – 6th Grade

1. Nich is watching a 24-minute video at 1.5 speed. How long will it take for Nich to watch the video?

2. I am a 3-digit number and all of my digits are odd. The sum of my digits is equal to 17, and my hundreds digit is three times my ones digit. What number am I?

3. What fraction is halfway between 1/3 and 3/4 on a number line? **Write the answer as a reduced fraction.**

4. Hot dogs are sold 10 per pack, while hot dog buns are sold 8 per pack. Each bottle of mustard can be used for 24 hot dogs. What is the smallest number of hot dogs that you buy so there are the same number of servings each?

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6. What is the sum 7 + 10 + 13 + … + 244?

7. A pair of numbers have a sum of 21 and a product of 108. What is the positive difference of the pair?

8. If $\dfrac{a}{b} = 2.2$ and $\dfrac{a+1}{b+1} = 2$, what is $\dfrac{a+7}{b+7}$? **Write the answer as a reduced fraction.**

9. At what step will there be 2021 squares?

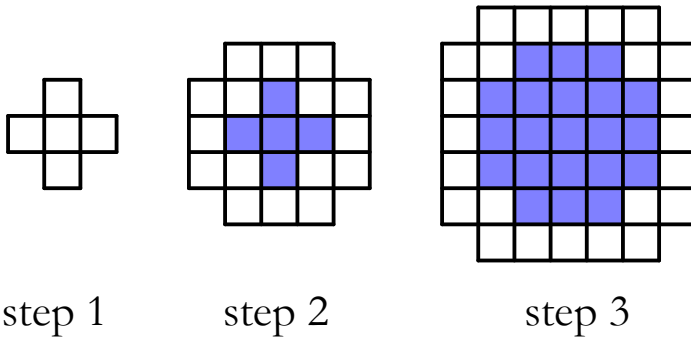step 1   step 2   step 3

10. A palindrome is a number like 535 that can be written the same backwards and forwards. What is the sum of all 3 – digit odd palindromes?

Whatcom County Math Championship – 2019
Algebra – 7th +8th Grade

1. Hot dogs are sold 10 per pack, while hot dog buns are sold 8 per pack. Each bottle of mustard can be used for 24 hot dogs. What is the smallest number of hot dogs that you buy so there are the same number of servings each?

2. Let @n is the sum of the factors of n (for example, @6 = 1 + 2 + 3 + 6 = 12). What is the smallest whole number m such that @m is larger than 2m?

3. What is the sum 7 + 10 + 13 + … + 244?

4. A pair of numbers have a sum of 21 and a product of 108. What is the positive difference of the pair?

5. If $\dfrac{a}{b} = 2.2$ and $\dfrac{a+1}{b+1} = 2$, what is $\dfrac{a+7}{b+7}$? **Write the answer as a reduced fraction.**

16. At what step will there be 2021 squares?

step 1   step 2   step 3

7. A palindrome is a number like 535 that can be written the same backwards and forwards. What is the sum of all 3 – digit odd palindromes?

8. A Lucas sequence of numbers is a sequence so that a term is the sum of the previous two terms (for example: 4, 7, 11, 18, 29…). If a Lucas sequence starts 5, ___, ___, ___, ___, ___, 121 what is the middle term?

9. What are the final two digits of 4^{2019}?

10. What is the largest product of the positive whole numbers that sum to 20?