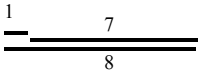
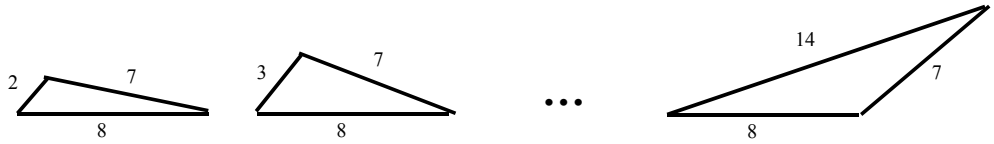
1. Right now it must be November, so 12 months from now it will be November, 24 months from now it will be November, etc. Whenever a number is divisible by 12, that many months from now it will be November. Using a calculator, 2004 is divisible by 12, so 2004 months from now, it will be November. So 2008 months from now, it will be March (count forward 4 more months.).

   Answer: March

2. The third side length cannot be 1 since we have:

   So the third side length can be 2, 3, 4, …. until 14 (15 will not work as shown in the question).

   There are 14 - 2 + 1 = 13 such possibilities.

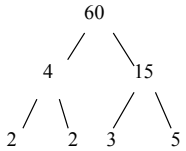
   Note: The exact condition on 3 numbers a, b, c forming a triangle is $a + b > c$, $b + c > a$, AND $a + c > b$.

   Answer: 13

3. The digit "2" appears 10 times in the tens digit, in 20, 21, …, 29. The digit "2" appears 10 more times in the ones digit in 2, 12, …, 92. Note it appears twice in the same number 22. But in total we still have 10 + 10 = 20 appearances.

   Answer: 20

4. You really just have to check and see that 1, 3, 5, 15 are the only ones. So there are 4. It helps a lot if you draw a factor tree to split up odd and even factors, and/or write $60 = 2^2 \times 3 \times 5$.

   Answer: 4

5. First, you go counterclockwise to the school, this takes 270°.

$$\frac{3^{15}+3^{15}}{3^{12}} = \frac{\overbrace{3\times 3\times \ldots\times 3}^{15\text{ times}}}{\underbrace{3\times 3\times \ldots\times 3}_{12\text{ times}}} + \frac{\overbrace{3\times 3\times \ldots\times 3}^{15\text{ times}}}{\underbrace{3\times 3\times \ldots\times 3}_{12\text{ times}}}$$

$= 3 \times 3 \times 3 + 3 \times 3 \times 3 = 54$

If you are familiar with exponents and algebra, you could have just done

$$\frac{3^{15}+3^{15}}{3^{12}} = 2\times\frac{3^{15}}{3^{12}} = 2\times 3^3 = 54$$

Answer: 54

6. This question tests the student's sense of ratios. 2 apples become 5 bananas, so 12 apples become $12 / 2 \times 5 = 6 \times 5 = 30$ bananas. And every 3 bananas will become 1 orange, so in the end, there are 10 oranges.

Answer: 10

7. On average his animals have 3 legs, so he must have an equal amount of chickens and cows. Since he has 18 animals (18 heads), he has 9 cows and 9 chickens.
   A lot students who did not notice the "average of 3" can still figure out the answer through trial and error.
   Advanced students can use variables:
   Let x be the number of chickens, y be the number of cows.

<1> $x + y = 18$, since 18 heads;
<2> $2x + 4y = 54$, since 54 legs.
<2> - 2 <1>: $2y = 18$
$y = 9$.

Answer: 9

8. The numbers from 1 to 25 sum up to $13 \times 25 = 325$, since the average of the 25 numbers is 13. Since each row has the same sum, each row's sum must be $325 \div 5 = 65$. Note: This question was very hard for a Part C. To sum up the numbers from 1 to 25 is quite difficult. Some students may have done it by just punching 1+2+3+…+25 into their calculator, though.

Answer: 65