1. $\boxed{6 \text{ patients}}$

2. $\boxed{27}$

3. From the first bag to the fifth bag, there are four spaces between the bags. Since it is 20 feet between the first and fifth bags, there are $20 \div 4 = 5$ feet between bags. Between the 1st and 25th bags, there are 24 spaces. Each space is 5 feet long, so the distance is $24 \times 5 = \boxed{120}$ feet.

4. 24 seconds $\times$ 30,000 students = 720,000 seconds total. 720,000 seconds $\div$ 60 seconds/min $\div$ 60 min/hr = 200 hours to solve the problem. So the ratio of development time to solving time is $\boxed{\frac{1}{200}}$

5. $\boxed{\$3.50}$

6. $\boxed{100}$

7. Guess and check: 5 hours: 25 hours = 2×12 hours + 1 hour. Not the same.

   6 hours: 36 hours = 3×12 hours. Not the same.

   7 hours: 49 hours = 4×12 hours + 1 hour. Not the same.

   8 hours: 64 hours = 5×12 hours + 4 hours. Not the same.

   9 hours: 81 hours = 6×12 hours + 9 hours. The same. $\boxed{9}$

8. $x + y = 15$, $xy = 16$. We want $\frac{1}{x} + \frac{1}{y}$. Write $\frac{1}{x} + \frac{1}{y}$ as a single fraction with common denominator xy: $\frac{y}{xy} + \frac{x}{xy} = \frac{x+y}{xy}$. Since we know what $x + y$ and xy are, we have our answer. $\boxed{\frac{15}{16}}$

9. Write the numbers 1 through 15 in a line and cross out every 3rd number that is not already crossed out starting with one:

   1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

   1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

   1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

   1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

   1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

   1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

   So we end up with 3. The pattern will be the same no matter what number we start with. So if 1 is the first number we erase, 3 is the last. If 2 is the first number we erase, 4 will be last. If 3 is the first number we erase, 5 will be last, and so on. So if 11 is last, the first number erased was $\boxed{9}$

10. Keep careful track of your work. First, we find the area of the paper: $10 \times 6 = 60$ square inches. In the notebook, there are 100 sheets, so there is a total of $60 \times 100 = 6000$ square inches of paper in one notebook. There are 24 notebooks, so in total, there are $24 \times 6000 = 144,000$ square inches of paper. Each square inch weighs 0.005 ounces, so the total weight of all the paper is $144,000 \times 0.005 = 720$ ounces. The covers weigh .5 ounces per notebook, so all the notebook covers weigh $24 \times .5 = 12$ ounces. So altogether, the notebooks weigh $720 + 12 =$ $\boxed{732}$