VI

1. The product of two consecutive numbers is 72. Find the smaller of the numbers.

|  |  |  |
| --- | --- | --- |
|  |  | 12 or -6  |
|  |  | -12 or 6  |
|  |  | 8 or -9  |
|  |  | -8 or 9  |

2. The number of people infected after t days is P = 200 + 5t - t2. Find the number of days until the number of people infected is 176.

|  |  |  |
| --- | --- | --- |
|  |  | 7  |
|  |  | 8  |
|  |  | 9  |
|  |  | 10  |

3. The sum of an integer and its square is 30. Find the number.

|  |  |  |
| --- | --- | --- |
|  |  | -3 or 10  |
|  |  | 3 or -10  |
|  |  | -5 or 6  |
|  |  | 5 or -6  |

4. The profit on a watch is given by P = x2 – 13x – 80 and where x is the number of watches sold per day. How many watches were sold on a day when there was a $50 loss?

|  |  |  |
| --- | --- | --- |
|  |  | 13  |
|  |  | 14  |
|  |  | 15  |
|  |  | 16  |

5. The square of an integer is 30 more than the integer. Find the integer.

|  |  |  |
| --- | --- | --- |
|  |  | -5 or 6  |
|  |  | 5 or -6  |
|  |  | -3 or 10  |
|  |  | 3 or -10  |

6. Tashia Baker is planning an expansion of a square flower garden in a city park. If each side of the original square is increased by 7 meters and the new total area of the garden will be 144 square meters. Find the length of the original garden.

|  |  |  |
| --- | --- | --- |
|  |  | 5 meters  |
|  |  | 7 meters  |
|  |  | 3 meters  |
|  |  | 12 meters  |

7. I am thinking of three consecutive negative numbers. If I multiply the first with the second and then subtract three times the third, the result is 57. What are the numbers? [ Show equation and all work]

V

1. Explain why a2 + b2 cannot be factored.

2. Find a value for k that will make 4x^2 + 6.4 x + k a perfect square. Describe the procedure that you used which requires algebra [that is, not trial and error].