

**College Bound Math Problem Set #10**  
week of 1 / 5 / 15 (January 5, 2015)

How many multiples of 5 can you find above?

**Solutions**  
are on this same page

<b>January 2015</b>				
<b>Monday</b>	<b>Tuesday</b>	<b>Wednesday</b>	<b>Thursday</b>	<b>Friday</b>
Find the sum of the squares of the two smallest positive integers.	<b>6</b>	Find the difference between the cubes of the two smallest positive integers.	Think of a one-digit integer. Square it. Subtract the number you started with. Divide by the number you started with. Subtract the number you started with. Add 9.	<b>9</b>

The problems above tell you the missing numbers in the calendar for the days of this week's site meetings. Two of them show that **5** and **7** have interesting properties. The picture at *right* shows that **8** is interesting too.

The first expression *below* puts the problem of **Thursday the 8th** into an algebraic form which is then simplified in a few steps to just the number 8. This shows you why it doesn't matter what number you picked to start with. Whatever it was, the result must be 8.



$$\frac{x^2 - x}{x} - x + 9 = (x - 1) - x + 9 = -1 + 9 = 8$$