

$m^2 + 6m + 5$ is a quadratic written in standard form ($ax^2 + bx + c$)

List out your factors for a x c:

$$\begin{array}{c} 5 \\ \wedge \\ 5+1=6 \end{array}$$

	X	5
X	x^2	$5x$
1	x	5

Which factors of a x c combine to be your b?

$$(x+5)(x+1)$$

Let's try the following:

<p>1) $k^2 - 3k - 54$</p> <p>-54 \wedge $18-3=15$ $6-9=-3$ $9-6$ $2-27$</p> <table border="1"> <tr> <td></td> <td>X</td> <td>6</td> </tr> <tr> <td>X</td> <td>x^2</td> <td>$6x$</td> </tr> <tr> <td></td> <td>$-9x$</td> <td>-54</td> </tr> </table> <p>-9</p> <p>$(x+6)(x-9)$</p>		X	6	X	x^2	$6x$		$-9x$	-54	<p>2) $x^2 + 6x - 40$</p> <p>-40 \wedge -58 $-4+10=6$</p> <table border="1"> <tr> <td></td> <td>X</td> <td>-4</td> </tr> <tr> <td>X</td> <td>x^2</td> <td>$-4x$</td> </tr> <tr> <td>10</td> <td>$10x$</td> <td>-40</td> </tr> </table> <p>$(x-4)(x+10)$</p>		X	-4	X	x^2	$-4x$	10	$10x$	-40	<p>3) $v^2 - 14v + 40$</p> <p>$(v-10)(v-4)$</p>
	X	6																		
X	x^2	$6x$																		
	$-9x$	-54																		
	X	-4																		
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10	$10x$	-40																		
<p>4) $p^2 - 11p + 10$</p> <p>10 \wedge $-1-10$</p> <table border="1"> <tr> <td></td> <td>p^2</td> <td>$-1p$</td> </tr> <tr> <td></td> <td>$-10p$</td> <td>10</td> </tr> </table> <p>$(p-1)(p-10)$</p>		p^2	$-1p$		$-10p$	10	<p>5) $m^2 + 13m + 42$</p>	<p>6) $b^2 + 11b + 24$</p>												
	p^2	$-1p$																		
	$-10p$	10																		
<p>7) $x^2 - 2x - 24$</p> <p>-24 \wedge $-6+4=-2$</p> <table border="1"> <tr> <td></td> <td>X</td> <td>-6</td> </tr> <tr> <td>X</td> <td>x^2</td> <td>$-6x$</td> </tr> <tr> <td>4</td> <td>$4x$</td> <td>-24</td> </tr> </table> <p>$(x-6)(x+4)$</p>		X	-6	X	x^2	$-6x$	4	$4x$	-24	<p>8) $k^2 - 13k + 30$</p>	<p>9) $v^2 + 10v + 16$</p>									
	X	-6																		
X	x^2	$-6x$																		
4	$4x$	-24																		

Now, let's try some where $a > 1$

10) $6x^2 + 5x + 1$

6
 $\begin{matrix} \wedge \\ 2 & 3 \\ 1 & 6 \end{matrix}$

	$3x$	1
$2x$	$6x^2$	$2x$
1	$3x$	1

$(3x+1)(2x+1)$

11) $3x^2 - 13x + 12$

36
 $\begin{matrix} \wedge \\ -6 & -6 \\ -4 & -9 \end{matrix}$ $\neq -13$

	$3x$	-4
$1x$	$3x^2$	$-4x$
-3	$-9x$	12

$(3x-4)(x-3)$

12) $4x^2 - 4x - 3$

-12
 $\begin{matrix} \wedge \\ -6 & 2 \end{matrix}$ $2 = -4$

	$2x$	-3
$2x$	$4x^2$	$-6x$
1	$2x$	-3

$(2x+1)(2x-3)$

13) $2x^2 + 23x + 30$

60
 $\begin{matrix} \wedge \\ 6 & 10 \\ 3 & 20 \end{matrix}$

	x	10
$2x$	$2x^2$	$20x$
3	$3x$	30

$(2x+3)(x+10)$

14) $9x^2 - 6x - 8$

-72
 $\begin{matrix} \wedge \\ -12 & 6 \end{matrix}$

	$3x$	-4
$3x$	$9x^2$	$-12x$
2	$6x$	-8

$(3x-4)(3x+2)$

15) $10x^2 + 18x - 4$

-40
 $\begin{matrix} \wedge \\ 20 & -2 \end{matrix}$

	$2x$	4
$5x$	$10x^2$	$20x$
-1	$-2x$	-4

$(10x-2)(x+2)$
 $(5x-1)(2x+4)$

~~$(5x+4)(3x-2)$~~

$2(5x-1)(x+2)$
 100% correct answer