Find the value of c that makes each trinomial a perfect square.

1.
$$x^2 - 24x + c$$

2.
$$x^2 - 9x + c$$

10.25

$$3. x^2 - x + c$$

Solve each equation by completing the square. Reduce your radical if necessary.

4.
$$x^2 - 14x - 24 = 0$$

$$x-7=\pm\sqrt{73}$$

$$x=7\pm\sqrt{73}$$

7.
$$n^2 - 10n - 8 = -7$$

$$(M-5)^2 = 10+1$$

5.
$$bs^2 + 12b = 13$$

$$(6+6)^2 = 36+13$$

$$8. x^2 + 18x - 50 = 9$$

6.
$$x^2 - 30x - 56 = -25$$

$$9.3g^2 + 15g - 3 = 0$$

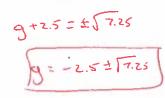
$$9.3g^2 + 15g - 3 = 0$$

$$g^2 + 5g = 1$$

 $(g+2.5)^2 = 6.25 + 1$

- 10. Jaime owns a business making decorative boxes to store jewelry, mementos, and other valuables. The function $y = x^2 + 50x + 1800$ models the profit y that Jaime has made in month x for the first two years of his business.
 - a. Write an equation representing the month in which Jaime's profit is \$2400.

b. Use completing the square to find out in which month Jaime's profit is \$2400.



$$(x+25)^2 = 1225$$
 $x = -500$
 $x = -500$

11. From a height of 256 feet above a lake on a cliff, Mikaela throws a rock out over the lake. The height H of the rock t seconds after Mikaela throws it is represented by the equation $H = -16t^2 + 32t + 256$. To the nearest tenth of a second, how long does it take the rock to reach the lake below? (Hint: Replace H with 0.)

+= 1 + VI7