

## Sixteenth Set of Homework for Math 05

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**Please note:** You should fully justify your answers.

### 1 Completing the square

1. Solve each of the following equations:

(a)  $3x^2 - 7 = -4$

(b)  $(x - 3)^2 = 49$

(c)  $(3x - 1)^2 - 3 = 61$

(d)  $(2x + 1)^2 = 5$

(e)  $(x - 2)^2 + 7 = 3$

(f)  $(3x + 5)^2 - 7 = -3$

(g)  $(x + 11)^2 - 2 = 10$

(h)  $(3x - 7)^2 + 6 = 81$

2. Solve each of the following equations by completing the square:

(a)  $x^2 - 10x = -19$

(b)  $x^2 - 4x + 4 = 4$

(c)  $x^2 - 6x + 9 = 11$

(d)  $x^2 - 14x + 46 = 33$

(e)  $x^2 + 10x + 25 = 13$

(f)  $x^2 + 8x = 11$

(g)  $x^2 - 22x + 121 = -5$

(h)  $x^2 + 3x - 8 = 5x + 11$

(i)  $x^2 + 6x - 12 = 4$

(j)  $x^2 - 30x + 3 = 45$

(k)  $x^2 - 3x - 30 = 3x + 10$

(l)  $x^2 + 7x - 44 = 0$

(m)  $x^2 + 3x - 6 = 11$

(n)  $3x^2 - x + 3 = 18$