Solve the following quadratic equations by completing the square:

$x^2 + 3x = x + 11$

$x^2+3x-x-11=0$

$x^2+2x-11=0$

$(x^2+2x+1)-11=1$

$\sqrt{(x+1)^2}=\sqrt{12}$

$x+1=\pm 2\sqrt{3}$

$x=-1\pm 2\sqrt{3}$

$10x^2 - 3 = x$

Create a quadratic function with the following zeros: $-3 \pm \sqrt{2}$

(Hint: Try and Reverse the completing the square process)

Page 45- 47: #10 (2nd column)
#11, #12 c, e
#13, #15, #17a, b

SOLUTIONS…

#10. a) $-9 \text{ and } 1$ b) $-\frac{1}{2} \text{ and } \frac{5}{2}$

c) $3 \pm \sqrt{11}$ d) $-\frac{4}{3} \text{ and } \frac{8}{3}$

e) $-\frac{5}{2} \pm \frac{\sqrt{30}}{2}$ f) $-3 \text{ and } 3$

g) $-5 \text{ and } 1$ h) $-\frac{1}{4} \pm \frac{\sqrt{37}}{4}$

#11. Mary: forgot to divide by 2 before squaring.
Terry: incorrectly factored the expression.

#12. (c) $y = 2x^2 + 7x + 3$ (Any multiple of these would be correct)
(e) $y = x^2 - 2$

#13. $y = 1.5x^2 - 6$ (There are many others that work)

#15. a) c = -8
b) 4/3

#17. (a) $x = 2$ and -0.75
(b) $x \approx$ -2.819 and -0.780