

Worksheet

08/09/2020

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Problem quickname: 2057

1)

Solve the equation. In order to do this, complete the square.

- a) Equation: $x^2 + 12x = 64$
Complete the square: $x^2 + \blacksquare x + \blacksquare = \blacksquare$
Form square: $(x + \blacksquare)^2 = \blacksquare$
Extract root: $x + \blacksquare = \pm \blacksquare$
Answer: $L = \{\blacksquare, \blacksquare\}$
- b) Equation: $x^2 - 8x = -7$
Complete the square: $x^2 - \blacksquare x + \blacksquare = \blacksquare$
Form square: $(x - \blacksquare)^2 = \blacksquare$
Extract root: $x - \blacksquare = \pm \blacksquare$
Answer: $L = \{\blacksquare, \blacksquare\}$
- c) Equation: $x^2 + 6x = 0$
Complete the square: $x^2 + \blacksquare x + \blacksquare = \blacksquare$
Form square: $(x + \blacksquare)^2 = \blacksquare$
Extract root: $x + \blacksquare = \pm \blacksquare$
Answer: $L = \{\blacksquare, \blacksquare\}$
- d) Equation: $x^2 + 10x = 56$
Complete the square: $x^2 + \blacksquare x + \blacksquare = \blacksquare$
Form square: $(x + \blacksquare)^2 = \blacksquare$
Extract root: $x + \blacksquare = \pm \blacksquare$
Answer: $L = \{\blacksquare, \blacksquare\}$
- e) Equation: $x^2 - 10x = 24$
Complete the square: $x^2 - \blacksquare x + \blacksquare = \blacksquare$
Form square: $(x - \blacksquare)^2 = \blacksquare$
Extract root: $x - \blacksquare = \pm \blacksquare$
Answer: $L = \{\blacksquare, \blacksquare\}$
- f) Equation: $x^2 - 10x = 24$
Complete the square: $x^2 - \blacksquare x + \blacksquare = \blacksquare$
Form square: $(x - \blacksquare)^2 = \blacksquare$
Extract root: $x - \blacksquare = \pm \blacksquare$
Answer: $L = \{\blacksquare, \blacksquare\}$

2)

Solve the equation. In order to do this, complete the square.

- a) Equation: $3x^2 + 18x - 38 = 43$
Move number -38 to the right: $\square x^2 + \square x = \square$
Convert to monic: $x^2 + \square x = \square$
Complete the square: $x^2 + \square x + \square = \square$
Form square: $(x + \square)^2 = \square$
Extract root: $x + \square = \pm \square$
Answer: $L = \{\square, \square\}$
- b) Equation: $2x^2 - 32x + 13 = -97$
Move number 13 to the right: $\square x^2 - \square x = \square$
Convert to monic: $x^2 - \square x = \square$
Complete the square: $x^2 - \square x + \square = \square$
Form square: $(x - \square)^2 = \square$
Extract root: $x - \square = \pm \square$
Answer: $L = \{\square, \square\}$
- c) Equation: $3x^2 - 42x - 24 = 21$
Move number -24 to the right: $\square x^2 - \square x = \square$
Convert to monic: $x^2 - \square x = \square$
Complete the square: $x^2 - \square x + \square = \square$
Form square: $(x - \square)^2 = \square$
Extract root: $x - \square = \pm \square$
Answer: $L = \{\square, \square\}$
- d) Equation: $2x^2 + 36x + 45 = -45$
Move number 45 to the right: $\square x^2 + \square x = \square$
Convert to monic: $x^2 + \square x = \square$
Complete the square: $x^2 + \square x + \square = \square$
Form square: $(x + \square)^2 = \square$
Extract root: $x + \square = \pm \square$
Answer: $L = \{\square, \square\}$
- e) Equation: $2x^2 - 8x + 5 = 125$
Move number 5 to the right: $\square x^2 - \square x = \square$
Convert to monic: $x^2 - \square x = \square$
Complete the square: $x^2 - \square x + \square = \square$
Form square: $(x - \square)^2 = \square$
Extract root: $x - \square = \pm \square$
Answer: $L = \{\square, \square\}$

f) Equation: $4x^2 - 80x + 16 = -348$
 Move number 16 to the right: $\square x^2 - \square x = \square$
 Convert to monic: $x^2 - \square x = \square$
 Complete the square: $x^2 - \square x + \square = \square$
 Form square: $(x - \square)^2 = \square$
 Extract root: $x - \square = \pm \square$
 Answer: $L = \{\square, \square\}$

3)

Solve the equation. In order to do this, complete the square.

a) $3x^2 - 42x - 19 = 77$ b) $3x^2 + 36x - 5 = -86$
 c) $3x^2 + 60x - 45 = -198$ d) $3x^2 - 30x - 45 = -108$
 e) $2x^2 + 24x + 42 = 2$ f) $x^2 + 12x - 38 = -10$

4)

Solve the equation.

a) $2x^2 - 36x - 33 = -163$ b) $x^2 - 14x - 8 = 7$
 c) $3x^2 + 42x - 50 = -89$ d) $3x^2 + 42x - 39 = 6$
 e) $2x^2 + 12x - 35 = 75$ f) $x^2 - 12x + 11 = -21$

Good Luck!