

Worksheet

08/09/2020

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Problem quickname: 2057

1)

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

a) $2x^2 + 36x = -34$ b) $3x^2 + 18x = 165$ c) $3x^2 + 24x = 195$

d) $3x^2 - 48x = 108$

2)

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

a) Equation: $2x^2 - 16x + 40 = 80$

Move number 40 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: $4x^2 - 40x - 33 = -33$

Move number -33 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: $4x^2 + 56x = -180$

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: $2x^2 + 16x - 32 = -32$

Move number -32 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: $x^2 + 16x + 13 = 30$
 Move number 13 to the right: $x^2 + \square x = \square$
 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: $4x^2 + 72x - 14 = -238$
 Move number -14 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) Equation: $x^2 + 10x = 39$
 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: $x^2 + 16x = -15$
 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: $x^2 - 14x = 0$
 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: $x^2 - 14x = -45$
 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: $x^2 + 18x = -72$
 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: $x^2 - 16x = 0$
 Complete the square: $x^2 - \square x + \square = \square$
 Form square: $(x - \square)^2 = \square$
 Extract root: $x - \square = \pm \square$
 Answer: $L = \{\square, \square\}$

4)

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

a) Equation: $4x^2 - 24x - 50 = -70$
 Move number -50 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: $4x^2 - 56x - 8 = -140$
 Move number -8 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: $3x^2 - 30x + 18 = 18$
 Move number 18 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: $3x^2 - 24x + 46 = 145$
 Move number 46 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: $2x^2 - 36x - 34 = -34$
 Move number -34 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: $2x^2 + 32x - 18 = -128$

Move number -18 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: $L = \{\square, \square\}$

Good Luck!