

Worksheet

08/09/2020

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Problem quickname: 2057

1)

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

- a) $4x^2 + 56x + 45 = -87$ b) $3x^2 + 54x + 27 = 84$
c) $3x^2 - 18x - 19 = -34$ d) $4x^2 + 56x - 16 = 112$
e) $3x^2 + 18x + 20 = 5$ f) $3x^2 - 18x - 48 = -27$

2)

Solve the equation.

- a) $4x^2 - 24x = 64$ b) $3x^2 + 24x + 2 = 146$ c) $x^2 + 12x + 42 = 31$
d) $4x^2 + 24x - 45 = 63$ e) $3x^2 + 30x - 5 = 28$
f) $3x^2 + 48x + 36 = -81$

3)

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

- a) $x^2 + 12x = -27$ b) $3x^2 - 54x = 57$ c) $4x^2 + 24x = 160$
d) $x^2 + 14x = -40$

4)

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

- a) Equation: $3x^2 - 36x + 11 = -85$
Move number 11 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: $3x^2 - 60x + 25 = -227$
Move number 25 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: $4x^2 - 24x - 36 = 184$
 Move number -36 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: $3x^2 - 36x - 8 = -68$
 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: $L = \{\square, \square\}$
- e) Equation: $3x^2 - 30x - 7 = -70$
 Move number -7 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: $3x^2 - 30x - 22 = 146$
 Move number -22 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!