Algebra 1 ECA Remediation

Name Answer Key

Homework 32.1

Solve each equation by completing the square.

1) $a^2 + 16a + 66 = 3$

$-66 \quad -66$

$a^2 + 16a + 64 = -63 + 64$

$\left(\frac{16}{2}\right)^2$

8^2

64

$(a+8)^2 = 1$

$\sqrt{(a+8)^2} = \pm\sqrt{1}$

$a + 8 = 1$ or $a + 8 = -1$

$-8 \quad -8$ $\quad$ $-8 \quad -8$

$a = -7$ $\quad$ $a = -9$

2) $x^2 + 20x + 57 = -8$

$-57 \quad -57$

$x^2 + 20x + 100 = -65 + 100$

$\left(\frac{20}{2}\right)^2$

10^2

100

$(x+10)^2 = 35$

$\sqrt{(x+10)^2} = \pm\sqrt{35}$

$x + 10 = \pm\sqrt{35}$

$x + 10 = +\sqrt{35}$ or $x + 10 = -\sqrt{35}$

$-10 \quad -10$ $\quad$ $-10 \quad -10$

$x = -10 + \sqrt{35}$ $\quad$ $x = -10 - \sqrt{35}$

3) $v^2 + 8v - 30 = 3$

$+30 \quad +30$

$v^2 + 8v + 16 = 33 + 16$

$\left(\frac{8}{2}\right)^2$

4^2

16

$(v+4)^2 = 49$

$\sqrt{(v+4)^2} = \pm\sqrt{49}$

$v + 4 = \pm 7$

$v + 4 = 7$ OR $v + 4 = -7$

$-4 \quad -4$ $\quad$ $-4 \quad -4$

$v = 3$ $\quad$ $v = -11$

4) $x^2 - 14x + 44 = -4$

$-44 \quad -44$

$x^2 - 14x + 49 = -48 + 49$

$\left(\frac{-14}{2}\right)^2$

$(-7)^2$

49

$(x-7)^2 = 1$

$\sqrt{(x-7)^2} = \pm\sqrt{1}$

$x - 7 = \pm 1$

$x - 7 = 1$ or $x - 7 = -1$

$+7 \quad +7$ $\quad$ $+7 \quad +7$

$x = 8$ $\quad$ $x = 6$

Simplify. Your answer should contain only positive exponents.

5) $4u^{-3} \cdot 3u^{-4}v^2$

$4 \cdot 3 \cdot u^{-3-4} v^2$

$\frac{12 u^{-7} v^2}{1}$

$\frac{12v^2}{u^7}$

6) $4y^2 \cdot 3xy^{-2}$

$4 \cdot 3 \cdot x \cdot y^{2-2}$

$= 12x \cdot y^0$

$= 12x$

7) $(v^4 \cdot vu^2 \cdot 2u^0v^2)^4$

$v^{16} \cdot v^4 u^8 \cdot 2^4 u^0 v^8$

$16 \; v^{16+4+8} u^{8+0}$

$16 v^{28} u^8$

8) $(x^0y^4 \cdot 2x^{-3})^4$

$x^0 y^{16} 2^4 x^{-12}$

$\frac{16 x^{0-12} y^{16}}{1}$

$\frac{16 y^{16}}{x^{12}}$

Answers to Homework 32.1

1) $\{-7, -9\}$

2) $\{-10 + \sqrt{35}, -10 - \sqrt{35}\}$

3) $\{3, -11\}$

4) $\{8, 6\}$

5) $\dfrac{12v^2}{u^7}$

6) $12x$

7) $16v^{28}u^8$

8) $\dfrac{16y^{16}}{x^{12}}$