

35. a. $3 + (7 + 4) = 3 + (4 + 7)$ commutative property of addition

b. $-5 \cdot -\frac{1}{5} = 1$ inverse property of multiplication

c. $\frac{2}{3}x + 0 = \frac{2}{3}x$ identity property of addition

36. A square root radical can only be split into two separate radicals if one of the factors has a **perfect square radicand**.

a. $\sqrt{54}$

$\sqrt{9} \cdot \sqrt{6}$

$3\sqrt{6}$

b. $\sqrt{48} + \sqrt{-49}$

$\sqrt{16} \sqrt{3} + 7i$

$4\sqrt{3} + 7i$

c. $\sqrt{6} (4 - \sqrt{12})$

$4\sqrt{6} - \sqrt{72}$

$4\sqrt{6} - \sqrt{36} \sqrt{2}$

$4\sqrt{6} - 6\sqrt{2}$

37. a. $4a^{\frac{2}{5}} - 3 = 33$

$4a^{\frac{2}{5}} = 36$

$a^{\frac{2}{5}} = 9$

$(a^{\frac{2}{5}})^{5/2} = 9^{5/2}$

$a = 3^5$

$a = 243$

b. $16^{2x-1} = (\frac{1}{8})^{x+5}$

$(2^4)^{2x-1} = (2^{-3})^{x+5}$

$2^{8x-4} = 2^{-3x-15}$

$8x - 4 = -3x - 15$

$11x - 4 = -15$

$11x = -11$

$x = -1$

38. Intercepts of each equation

a. $5x + 2y = -15$

x int = $\frac{c}{a} = \frac{-15}{5} = -3$

y int = $\frac{c}{b} = \frac{-15}{2} = -7.5$

b. $3y - 12 = 4x$ $3y - 4x = 12$

x int = $\frac{c}{a} = \frac{12}{-4} = -3$

y int = $\frac{c}{b} = \frac{12}{3} = 4$