

Algebra II

$k=12$ 1

$$3x + 2y + 5 = 0$$

$$4x - 2y + 9 = 0$$

$$7x + 14 = 0$$

$$x = -2$$

$$3(-2) + 2y + 5 = 0$$

$$-6 + 2y + 5 = 0$$

$$2y - 1 = 0$$

$$y = \frac{1}{2}$$

$$5x + ky + 4 = 0$$

$$5(-2) + \frac{1}{2}k + 4 = 0$$

$$-10 + 4 + \frac{1}{2}k = 0$$

$$-6 + \frac{1}{2}k = 0$$

$$-\frac{1}{2}k = 6$$

$$k = -12$$

24 2

$$x + (x+6) + (x+12) + (x+18) + (x+24) = 100$$

$$5x + 60 = 100$$

$$5x = 40$$

$$x = 8$$

$$8 + 18 = 24$$

$$3 (2-3)^5 = (-1)^5 = -1$$

4 4

$$\sqrt{x-3} (\sqrt{x} + \sqrt{x-3}) = \left(\frac{3}{\sqrt{x-3}} \right) \sqrt{x-3}$$

$$\sqrt{x(x-3)} + x - 3 = 3$$

$$\sqrt{x(x-3)} = 6 - x$$

$$x(x-3) = 36 - 12x + x^2$$

$$x^2 - 3x = 36 - 12x + x^2$$

$$-3x = 36 - 12x$$

$$+12x$$

$$9x = 36 \quad x = 4$$

Alg II Solutions

$$5 \begin{bmatrix} x & 2 & -3 \\ 1 & 4 & 1 \\ 2 & 3 & -1 \end{bmatrix} \begin{matrix} x & 2 \\ 1 & x \\ 2 & 3 \end{matrix}$$

$$\begin{aligned} (-x^2 + 4 - 9) - (-6x + 3x - 2) &= -13 \\ -x^2 - 5 + 6x - 3x + 2 & \\ -x^2 + 3x - 3 &= -13 \\ -x^2 - 3x - 10 &= 0 \\ (x-5)(x+2) &= 0 \\ x=5 \quad x=-2 & \end{aligned}$$

6) $4! \cdot 3!$

$4 \cdot 3 \cdot 2 \cdot 3 \cdot 2 = 144$

① -1 top $y =$

$$\begin{vmatrix} 1 & -1 & 1 & 1 & -1 \\ 3 & 13 & -5 & 3 & 13 \\ 5 & 1 & 2 & 5 & 1 \end{vmatrix} = (26 + 25 + 3) - (65 + -5 + -6)$$

$$54 - 54 = 0$$

$$\begin{vmatrix} 1 & 1 & 1 & 1 & 1 \\ 3 & -1 & -5 & 3 & -1 \\ 5 & 3 & 2 & 5 & 3 \end{vmatrix} = (-2 - 25 + 9) - (-5 - 15 + 6)$$

$$-18 - (-14) = -4$$

$$x = \begin{vmatrix} -1 & 1 & 1 & -1 & 1 \\ 13 & -1 & -5 & 13 & -1 \\ 1 & 3 & 2 & 1 & 3 \end{vmatrix} = (2 + -5 + 39) - (-1 + 15 + 26)$$

$$36 - 40 = -4$$

$$x = \frac{-4}{-4} = 1$$

$$y = \begin{vmatrix} 1 & 1 & -1 & 1 & 1 \\ 3 & -1 & 13 & 3 & -1 \\ 5 & 3 & 1 & 5 & 3 \end{vmatrix} = (-1 + 65 - 19) - (5 + 39 + 3)$$

$$55 - 47 = 8$$

$$\frac{8}{-4} = -\frac{1}{2}$$

$$x = 1 + 0 - 2 = -1$$

6.9 #8
man

$$\left(\frac{75}{240} \cdot 15\right) : (40 - 75) \cdot 60 = 6.9 \text{ min}$$

$$\frac{1.5}{60} = \frac{15}{600} = \frac{1}{40}$$

of an hour

240

$$9 \frac{135}{60^2} = \frac{x}{80^2}$$

$$60^2 x = 135(80)^2$$

$$3600x = 135(6400)$$

$$x = \frac{135 \cdot 16}{185} = 11.7$$

Algebra II Team Solutions

#11

$$84x^4y^{15} \left(\frac{7}{5}\right) (2x^2)^2 y^5 = 84x^4y^{15}$$

5 #12

$$\begin{array}{ccc|cc} -1 & -1 & 1 & -1 & -1 \\ -\frac{1}{2} & 2 & -2 & 1 & 2 & -2 \\ -2 & -4 & 1 & -2 & -4 \end{array} \quad \begin{array}{l} (2+2-8)-(4+4-2) \\ -\frac{1}{2}(-4-6)=5 \end{array}$$

3/4 #10

$$\frac{\left(\frac{3}{a} + \frac{3}{b} - \frac{6}{ab}\right) \cdot ab}{\frac{4}{a} + \frac{4}{b} + \frac{8}{ab}} = \frac{3b+3a-6}{4b+4a+8} = \frac{3(b+a-2)}{4(b+a+8)} = \frac{3}{4}$$

44 13

$$2^{13} 5^{10} = (2 \cdot 5)^{10} \cdot 2^3$$

8 + (ten zeros) 11.4 = 44

14

14

$$\frac{5z+12}{(25)^2} = \frac{\left(-\frac{2}{5}\right)^2 - 2\left(-\frac{1}{5}\right)}{\left(-\frac{1}{5}\right)^2} = \frac{\frac{4}{25} + \frac{2}{5}}{\frac{1}{25}} = \frac{\frac{14}{25} \cdot \frac{25}{1}}{1} = 14$$

15

let $a = x^{1/3}$ then

$$4a^2 + a - 5 = 0$$

$$4a^2 + 5a - 4a - 5 = 0$$

$$a(4a+5) - 1(4a+5) = 0$$

$$(a-1)(4a+5) = 0$$

$$a = 1 \text{ or } a = -\frac{5}{4}$$

$$x^{1/3} = 1 \quad \left[x^{1/3}\right]^3 = \left[-\frac{5}{4}\right]^3$$

$$x = 1$$

$$x = -\frac{125}{64}$$