Graphic Arts
Mixture Worksheet

Name Key

1. You must mix Pantone 277c. The color recipe states you need 31 parts Pantone White and 1 part Pantone Reflex Blue. If you need a total of 7 ounces for a job, how much of each color do you need?

$31+1 = 32$ parts

x Pan. White $31/32 = 96.875\%$

y Pan Ref. Blue $1/32 = 3.125\%$

$x+y=7$

$.96875(7) = 6.8$ oz Pan. White

$.03125(7) = .2$ oz Pan Ref. Blue

2. You must mix Pantone 319c. The color recipe states you need 2 parts Pantone Process Blue, 2 parts Pantone Green, and 12 parts Pantone White. If you need a total of 14 ounces for a job, how much of each color do you need?

$2+2+12 = 16$ parts

x Pan Process Blue $\frac{2}{16} = 12.5\%$ $.125 \times 14 = 1.75$ oz

y Pan. Green $\frac{2}{16} = 12.5\%$ $.125 \times 14 = 1.75$ oz

z Pan White $\frac{12}{16} = 75\%$ $.75 \times 14 = 10.5$ oz

$x+y+z = 14$

For problems 3-6, solve for the ordered pair.

3. $3x+8y=-20$

$-3(x+2y=-6)$

$-3x-6y=18$

$+\ 3x+8y=-20$

$2y=-2$

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

$y=-1$

$x+2(-1)=-6$

$x-2=-6$

$+2 \quad +2$

$x=-4$

$(-4,-1)$

4. $3x-4y=-24$

$4(x+y=-1)$

$3x-4y=-24$

$4x+4y=-4$

$7x=-28$

$\frac{7x}{7}=\frac{-28}{7}$

$x=-4$

$-4+y=-1$

$+4 \quad +4$

$y=3$

$(-4,3)$

5. $3x - 4y = 9$

$-3x + 2y = 9$

$-2y = 18$

$\frac{-2y}{-2} = \frac{18}{-2}$

$y = -9$

$3x - 4(-9) = 9$

$3x + 36 = 9$

$-36 \quad -36$

$\frac{3x}{3} = \frac{-27}{3}$

$x = -9$

$(-9, -9)$

6. $2(5x + 3y = -6)$

$3(3x - 2y = 4)$

$10x + 6y = -12$

$9x - 6y = 12$

$19x = 0$

$\frac{19x}{19} = \frac{0}{19}$

$x = 0$

$3(0) - 2y = 4$

$0 - 2y = 4$

$\frac{-2y}{-2} = \frac{4}{-2}$

$y = -2$

$(0, -2)$

7. A chemist has a solution which is 75% acid and another which is 30% acid solution. How many pounds of each solution should be used to produce 36 pounds of a 55% acid solution?

	Solution 1 +	Solution 2 =	New Solution
Amount of mixture	x	y	36
* % of acid	.75	.3	.55
= total acid in mix	$.75x$	$.3y$	19.8

$36(.55) = 19.8$

$-.3(x + y = 36)$

$.75x + .3y = 19.8$

$-.3x - .3y = -10.8$

$+ \quad .75x + .3y = 19.8$

$.45x = 9$

$\frac{.45x}{.45} = \frac{9}{.45}$

$x = 20$

$x + y = 36$

$20 + y = 36$

$-20 \quad -20$

$y = 16$

20 lbs at 75% acid

16 lbs at 30% acid