

Standard Form - Linear Equation
 $Ax + By = C$ Where A, B, +C are Real Numbers
 Write in standard form with integer coefficients A+B CANNOT BOTH EQUAL ZERO.

$y = 8x - 9$
 $-8x - 8x + y = -9$
 $x + y = -9$

$y = -3x + 4$
 $+3x + 3x + y = 4$
 $3x + y = 4$

mult by 5 to get integers
 $y = \frac{2}{5}x - 7$
 $5y = 2x - 35$
 $-2x - 2x + 5y = -35$
 $-2x + 5y = -35$

$\frac{2}{5} \cdot \frac{5}{1} = 2$

Write an equation in standard form for the line that passes through the point (8,-2) with the slope of -4.

$y = mx + b$
 $y = -4x + 30$
 $-2 = -4(8) + b$
 $-2 = -32 + b$
 $30 = b$
 $4x + y = 30$

$y - (-2) = -4(x - 8)$
 $y + 2 = -4x + 32$
 $-2 + 4x - 2 = -4x + 32 - 2$
 $4x + y = 30$

Write an equation in standard form for the line that passes through the points (8,-2) and (5,3).

$\frac{-2 - 3}{8 - 5} = \frac{-5}{3}$
 $y - (-2) = -\frac{5}{3}(x - 8)$
 $y + 2 = -\frac{5}{3}x + \frac{40}{3}$

SAT
 1 In a certain lawn-mower factory, 0.06 percent of all mowers produced are defective. On the average, there will be 3 defective mowers out of how many produced?

A 500
 B 1800
 C 5000
 D 18000
 E 50000

$.06\%$ percent
 $\frac{.0006}{100} = \frac{.06}{10,000} = \frac{6}{10,000}$

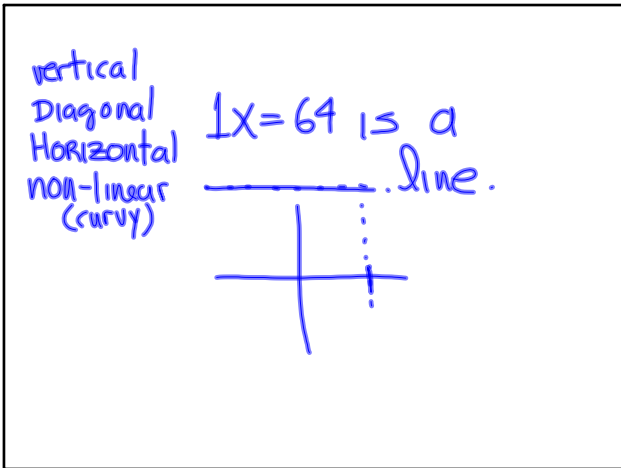
Practice C

1. $-3x + y = -9$ 2. $6x - y = 12$
 3. $-4x + 5y = -40$ 4. $8x + 7y = -95$
 5. $-67x - 96y = -42$ 6. $70x + 35y = 68$
 7. $x = -64$ 8. $7y = -3$ 9. $2x + 5y = 8$
 10. $-12x + 75y = 5$ 11. $-3x + 4y = -80$
 12. $6x + 7y = -108$ 13. $5x - y = 26$
 14. $3x + y = -17$ 15. $6x + y = 3$
 16. $x + 6y = 22$ 17. $-x + 3y = -17$
 18. $x + 2y = 5$ 19. $-2x + 3y = -27$
 20. $4x + 7y = 21$ 21. $-7x + 9y = -38$
 22. $-5x + 4y = -5$ 23. $-6x - 21y = 63$
 24. $20x + 32y = -56$ 25. $y = \frac{1}{2}, x = 0$
 26. $y = 4, x = -7$ 27. $y = -10, x = -8$
 28. $y = -3, x = 5$ 29. $1.5x + 2.5y = 60$
 30. $y = -0.6x + 24$

① $Ax + By = C$
 $-3x + y + 9 = 0$
 $-9 - 9$
 $-3x + y = -9$

⑤ $Ax + By = C$
 $(-9.6y - 6.7x + 4.2 = 0)^{10}$
 $-9.6y - 6.7x + 4.2 = 0$
 $\quad \quad \quad -42 \quad -42$
 $(-9.6y - 6.7x = -4.2)(-1)$
 $9.6y + 6.7x = 4.2$
 $6.7x + 9.6y = 4.2$

⑦ $\frac{1}{4}x + 16 = 0$
 $1x + 64 = 0$
 $1x = -64$



⑬ $(6, 4)$ $m = 5$

$y = mx + b$
 $4 = 5(6) + b$
 $4 = 30 + b$
 $-26 = b$
 $y = 5x - 26$
 $-5x - 5x$
 $(-5x + y = -26)(-1)$
 $5x - y = 26$

$y - y_1 = m(x - x_1)$
 $y - 4 = 5(x - 6)$
 $y - 4 = 5x - 30$
 $-y \quad -y$
 $-4 = 5x - y - 30$
 $+30 \quad +30$
 $26 = 5x - y$
 $5x - y = 26$

⑰ $(5, -4)$ $m = \frac{1}{3}$

$y = mx + b$
 $-4 = \frac{1}{3}(5) + b$
 $-4 = \frac{5}{3} + b$
 $-\frac{12}{3} = \frac{5}{3} + b$
 $-\frac{5}{3} - \frac{5}{3}$
 $-\frac{17}{3} = b$
 $y = \frac{1}{3}x - \frac{17}{3}$
 $-\frac{1}{3}x + y = -\frac{17}{3}$
 $-x + 3y = -17$

$y - y_1 = m(x - x_1)$
 $y - (-4) = \frac{1}{3}(x - 5)$
 $y + 4 = \frac{1}{3}x - \frac{5}{3}$
 $y = \frac{1}{3}x - \frac{5}{3} - \frac{12}{3}$
 $y = \frac{1}{3}x - \frac{17}{3}$
 $3y = x - 17$
 $-x + 3y = -17$

⑲ $(3, -7), (-3, -11)$

Find Slope
 $\frac{-7 - (-11)}{3 - (-3)} = \frac{4}{6} = \frac{2}{3} = m$

Choose $(3, -7)$ - Picks a point & solution
 $-7 = \frac{2}{3}x + b$
 $-7 = 2 + b$
 $-2 - 2$ - subtract 2
 $-9 = b$

$y = \frac{2}{3}x - 9$ - slope-intercept
 $(\frac{2}{3}x + y = -9)(-3)$ - makes lead coefficient positive
 $2x - 3y = 27$ make integer coefficients.

$y - (-7) = \frac{2}{3}(x - 3)$
 $y + 7 = \frac{2}{3}x - 2$
 $+2 \quad +2$
 $y + 9 = \frac{2}{3}x$
 $-y \quad -y$
 $9 = \frac{2}{3}x - y$
 $(\frac{2}{3}x - y = 9)(3)$
 $2x - 3y = 27$

STANDARD FORM

23 $(0, -3)$ $(7, -5)$
 $x=0$
 $y=mt$
 $\frac{-5 - (-3)}{7 - 0} = \frac{-2}{7} = -\frac{2}{7}$ slope
 $(y = -\frac{2}{7}x - 3) \cdot 7$ ← multiply by 7
 to get integer
 coefficients.
 $7y = -2x - 21$
 $2x + 7y = -21$

$$\frac{1}{7} = .142857 \quad \frac{4}{7} = .571428$$

$$\frac{2}{7} = .285714 \quad \frac{5}{7} = .714285$$

$$\frac{3}{7} = .428571 \quad \frac{6}{7} = .857142$$

You are buying \$20 worth of bird seed that consists of two types of seed. Thistle seed attracts finches and costs \$2 per pound. Dark oil sunflower seed attracts many kinds of song birds and costs \$1.50 per pound.

Write an equation that represents the different amounts of \$20 thistle seed x and \$1.50 dark oil sunflower seed y that you could buy.