Dear Rising Form II Geometry Students,

Attached to this letter is a summer work packet for you. The packet is divided into three sections – June, July and August to encourage you to do work throughout the summer rather than saving it for the last weeks of August. Practicing concepts at regular intervals will help you retain the information better and reduce some of the dreaded summer slide.

This packet is highly recommended, and Mr. Meyer will be collecting it at the start of the school year to see who completed it. After a brief period of review, Geometry students will take an assessment of their Algebra I skills, and the content in this packet will help keep those skills sharp over the summer.

We hope you enjoyed your journey through Algebra I this year!

Best,

Mr. Meyer and Mr. Romero

Name _____

Rising Form II Geometry Summer Work
June Problems

Linear Equations

Solve for the variable in the following equations.

1. $7m - 3 = -38$

2. $12 = 18 - \frac{2}{5}c$

3. $12(v + 3) = 72$

4. $5y + 13 - 7y = 3$

5. $10x - 4x = 8(x - 7) - 8(x - 1)$

6. $4n - 7(n - 2) - 11 = 3(1 - n)$

7. $\frac{4}{5} = \frac{k+7}{7}$

8. $\frac{4}{3} = \frac{x-10}{x-7}$

Quadratic Equations

9. $c^2 - 12c + 20 = 0$

10. $2x^2 + 28x = -66$

11. $m^2 + 16m + 12 = -6$

12. $7n^2 + 10n = 23$

Linear Functions

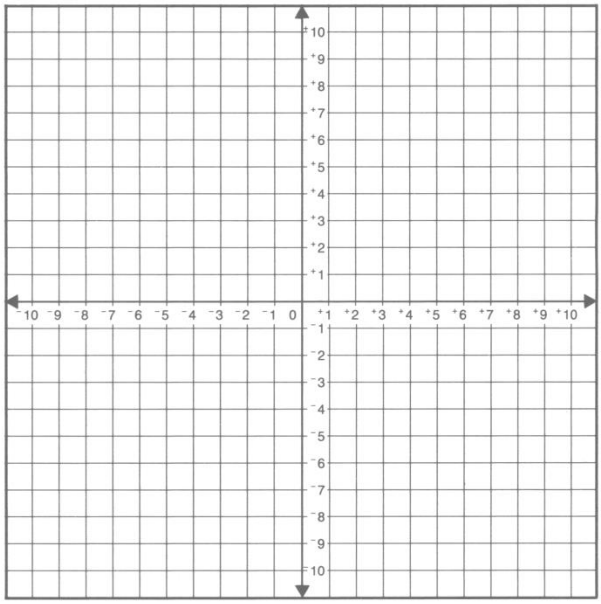
13. Find the slope of the line going through: (12, -2) and (5, 14)

14. Graph the equation: $y - 4 = \frac{5}{2}(x + 1)$

Name the slope: _____

Name the point given in the equation:

_____



15. $y = \frac{2}{5}x - \frac{1}{4}$

slope _____

y-intercept _____

standard form _____

x-intercept _____

slope of a perpendicular line _____

16. Write the equation of a line in slope-intercept form that passes through (-8, 12) and is parallel to $2x - 3y = 24$.

Systems of Equations

Solve each system using substitution or elimination.

17. $\begin{cases} -20x + 8y = 8 \\ -10x + 5y = 15 \end{cases}$

18. $\begin{cases} -2x + 6y = -38 \\ 4x + 3y = 31 \end{cases}$

19. $\begin{cases} 3x - 9y = 12 \\ x - 3y = 4 \end{cases}$

Name _____

Rising Form II Geometry Summer Work
July Problems

Linear Equations

Solve for the variable in the following equations.

1. $77 = -2p - 5$

2. $\frac{3}{8}c + 6 = -\frac{7}{4}$

3. $\frac{1}{3}(n - 5) = 20$

4. $-9w - 18 + 23 + w = 37$

5. $2 - 8(x + 7) = 3(x - 7)$

6. $5(7 - v) + 8v = 2v + 5(1 + v) + 6v$

7. $\frac{m}{m+9} = \frac{8}{9}$

8. $\frac{8}{6} = \frac{d+9}{d-9}$

Quadratic Equations

9. $w^2 + 7w - 3 = 0 - 3$

10. $8x^2 + 96x + 228 = 12$

11. $m^2 + 10m - 94 = -6$

12. $3x^2 - 70 = -11x$

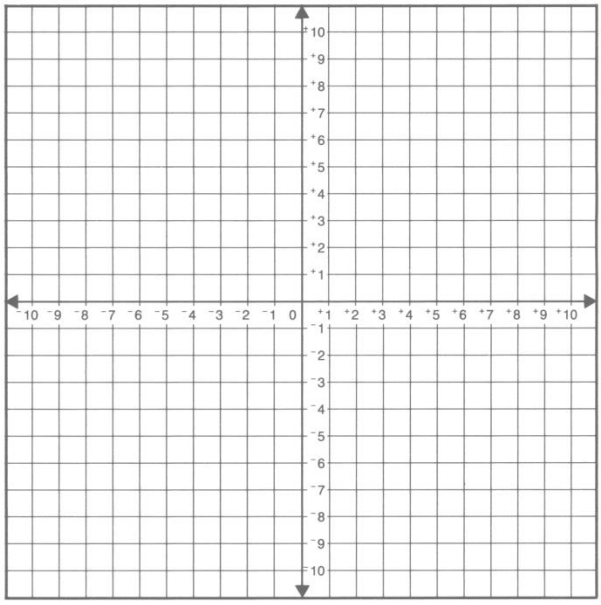
Linear Functions

13. Find the slope of the line going through: $\left(2, \frac{17}{6}\right)$ and $\left(\frac{3}{2}, \frac{5}{6}\right)$

14. Graph the equation: $5x - 2y = -20$

x – intercept _____

y – intercept _____



15. $8x + 3y = 48$

x-intercept _____

y-intercept _____

Slope-Intercept Form _____

slope of a parallel line _____

16. Write the equation of a line in slope-intercept form that passes through (-6, -10) and is perpendicular to $9x - 2y = 36$.

Systems of Equations

Solve each system using substitution or elimination.

17. $\begin{cases} 6x - 6y = -12 \\ -18x + 18y = 36 \end{cases}$

18. $\begin{cases} x + 3y = -15 \\ -3x - 4y = 20 \end{cases}$

19. $\begin{cases} 4x + y = -21 \\ -4x + 8y = -24 \end{cases}$

Name _____

Rising Form II Geometry Summer Work
August Problems

Linear Equations

Solve for the variable in the following equations.

1. $14 = 8p - 18$

2. $\frac{3}{2}n + \frac{3}{8}n = -\frac{22}{15}$

3. $4(9 - y) = 34$

4. $16p - 14p + 2 + p = 37$

5. $3(2x - 5) - (x + 7) = 9(x - 8) + 15$

6. $-7(v + 4) = -5v + 4(-7 - v)$

7. $\frac{m-3}{2} = \frac{7}{10}$

8. $\frac{9}{r+5} = \frac{10}{r+9}$

Quadratic Equations

Solve each quadratic equation. Make sure you practice factoring, square roots, completing the square and the quadratic formula.

9. $5m^2 + 22m = 15$

10. $4x^2 - 10 = -12$

11. $m^2 - 18m + 68 = -4$

12. $3p^2 + 2x = 4$

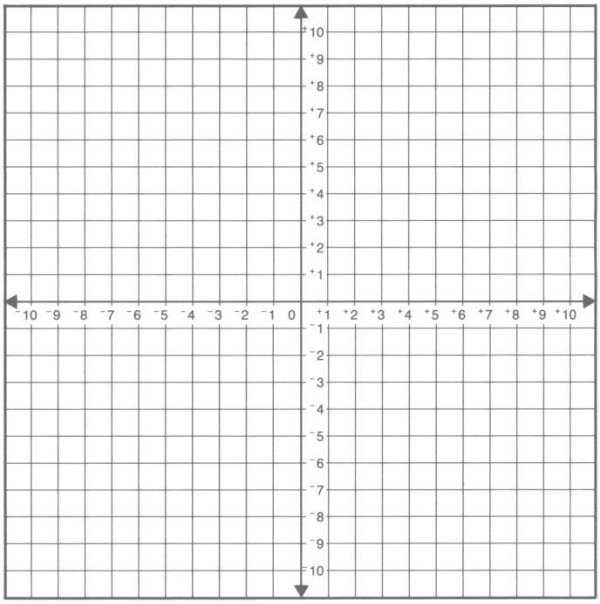
Linear Functions

13. Find the slope of the line going through: $\left(-5, \frac{1}{3}\right)$ and $\left(\frac{4}{3}, 7\right)$

14. Graph the equation: $5x + 3y = 30$

x – intercept _____

y – intercept _____



15. $7x + 3y = 42$

x-intercept _____

y-intercept _____

Slope-Intercept Form _____

slope of a parallel line _____

16. Write the equation of a line in slope-intercept form that passes through (2, 9) and is perpendicular to $3x + y = 12$.

Systems of Equations

Solve each system using substitution or elimination.

17. $\begin{cases} -16x - 6y = 28 \\ 8x + 4y = -8 \end{cases}$

18. $\begin{cases} -21x = 21 - 42y \\ 6x - 12y = -6 \end{cases}$

19. $\begin{cases} -x + 5y = -7 \\ x - 4y = 4 \end{cases}$

Name _____

Accelerated Algebra Summer Work
June Problems

Linear Equations
Solve for the variable in the following equations.

1. $7m - 3 = -38$

$+3 \quad +3$

$\frac{7m}{7} = \frac{-35}{7}$

$m = -5$

2. $12 = 18 - \frac{2}{5}c$

$-18 \quad -18$

$-\frac{5}{2} \times -6 = -\frac{2}{5}c \times -\frac{5}{2}$

$15 = c$

3. $\frac{12(v+3)}{12} = \frac{72}{12}$

$v + 3 = 6$

$-3 \quad -3$

$v = 3$

4. $5y + 13 - 7y = 3$

$-2y + 13 = 3$

$-13 \quad -13$

$\frac{-2y}{-2} = \frac{-10}{-2}$

$y = 5$

5. $10x - 4x = 8(x-7) - 8(x-1)$

$6x = 8x - 56 - 8x + 8$

$\frac{6x}{6} = \frac{-48}{6}$

$x = -8$

6. $4n - 7(n-2) - 11 = 3(1-n)$

$4n - 7n + 14 - 11 = 3 - 3n$

$-3n + 3 = 3 - 3n$

$+3n \quad +3n$

$3 = 3$

all real numbers

7. $\frac{4}{5} = \frac{k+7}{7}$

$28 = 5k + 35$

$-35 \quad -35$

$\frac{-7}{5} = \frac{5k}{5}$

$-\frac{7}{5} = k$

8. $\frac{4}{3} = \frac{x-10}{x-7}$

$4x - 28 = 3x - 30$

$-3x \quad -3x$

$x - 28 = -30$

$+28 \quad +28$

$x = -2$

Quadratic Equations

9. $c^2 - 12c + 20 = 0$

$(c-10)(c-2) = 0$

$c = 10$ or 2

10. $2x^2 + 28x = -66$

$\frac{2x^2+28x+66}{2} = \frac{0}{2}$

$x^2 + 14x + 33 = 0$

$(x+3)(x+11) = 0$

$x = -3$ or -11

compl. the square

11. $m^2 + 16m + 12 = -6$

$m^2 + 16m + 64 = -18 + 64$

$\sqrt{(m+8)^2} = \sqrt{46}$

$m + 8 = \pm\sqrt{46}$

$m = -8 \pm \sqrt{46}$

12. $7n^2 + 10n = 23$

$\frac{-10 \pm \sqrt{10^2 - 4(7)(-23)}}{2(7)}$

$\frac{-10 \pm \sqrt{744}}{14}$

$n \approx 1.23$ or -2.66

Linear Functions

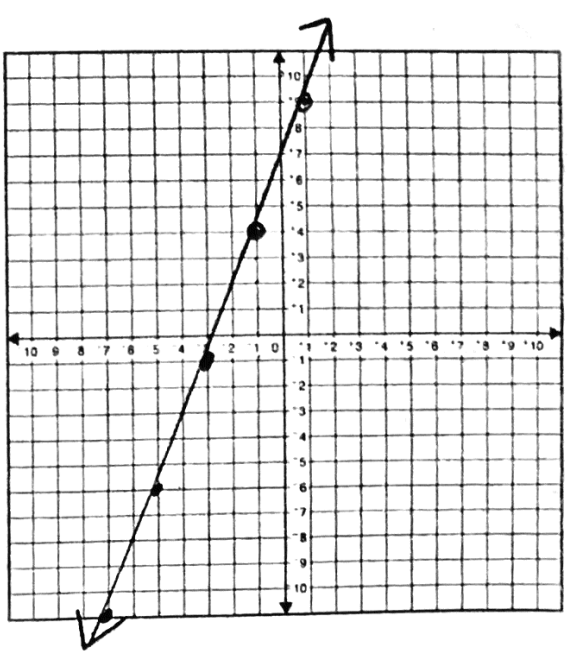
13. Find the slope of the line going through: (12, -2) and (5, 14)

$\frac{14+2}{5-12} = \frac{16}{-7} = -\frac{16}{7}$

14. Graph the equation: $y - 4 = \frac{5}{2}(x + 1)$

Name the slope: $5/2$

Name a point on the line: $(-1, 4)$



15. $y = \frac{2}{5}x - \frac{1}{4}$

slope $\frac{2}{5}$

y-intercept $-\frac{1}{4}$

standard form $8x - 20y = 5$

x-intercept $\frac{5}{8}$

slope of a perpendicular line $-\frac{5}{2}$

$20y = \left(\frac{2}{5}x - \frac{1}{4}\right)20$

$20y = 8x - 5$

$-8x \quad -8x$

$-8x + 20y = -5$

$8x - 20y = 5$

$8x = 5$

$x = 5/8$

16. Write the equation of a line in slope-intercept form that passes through (-8, 12) and is parallel to $2x - 3y = 24$.

$m = \frac{2}{3}$

$\frac{-3y}{-3} = \frac{-2x}{-3} + \frac{24}{-3}$

$y = \frac{2}{3}x - 8$

$y - 12 = \frac{2}{3}(x + 8)$

$y - \frac{36}{3} = \frac{2}{3}x + \frac{16}{3}$

$+\frac{36}{3} \qquad +\frac{36}{3}$

$y = \frac{2}{3}x + \frac{52}{3}$

Systems of Equations

Solve each system using substitution or elimination.

17. ~~16.~~ $\begin{cases} -20x + 8y = 8 \\ -10x + 5y = 15 \end{cases}$ (-2)

$-20x + 8y = 8$

$20x - 10y = -30$

$-2y = -22$

$y = 11$

$-20x + 8(11) = 8$

$-20x + 88 = 8$

$-88 \quad -88$

$-20x = -80$

$x = 4$

$(4, 11)$

18. ~~17.~~ $\begin{cases} -2x + 6y = -38 \\ 4x + 3y = 31 \end{cases}$) 2

$+ \quad -4x + 12y = -76$

$15y = -45$

$y = -3$

$4x + 3(-3) = 31$

$4x - 9 = 31$

$+9 \quad | \quad +9$

$4x = 40$

$x = 10$

$(10, -3)$

P. ~~18.~~ $\begin{cases} 3x - 9y = 12 \\ x - 3y = 4 \end{cases}$

$x = 3y + 4$

$3(3y+4) - 9y = 12$

$9y + 12 - 9y = 12$

$12 = 12$

infinitely many solutions

Name Key

Accelerated Algebra Summer Work
July Problems

Linear Equations
Solve for the variable in the following equations.

1. $77 = -2p - 5$

$+5 \quad +5$

$\frac{82}{-2} = \frac{-2p}{-2}$

$-41 = p$

$3 \cdot x\frac{1}{3}(n-5) = 20 \times 3$

$n - 5 = 60$

$+5 \quad +5$

$n = 65$

2. $\frac{3}{8}c + 6 = -\frac{7}{4}$

$-\frac{24}{4} \quad -\frac{24}{4}$

$\frac{8}{3} \cdot \frac{3}{8}c = \frac{-31}{4} \cdot \frac{2}{3}$

$c = -\frac{62}{3}$

4. $-9w - 18 + 23 + w = 37$

$-8w + 5 = 37$

$-5 \quad -5$

$\frac{-8w}{-8} = \frac{32}{-8}$

$w = -4$

5. $2 - 8(x + 7) = 3(x - 7)$

$2 - 8x - 56 = 3x - 21$

$+8x \quad +8x$

$-54 = 11x - 21$

$+21 \quad +21$

$\frac{-33}{11} = \frac{11x}{11}$

$x = -3$

6. $5(7 - v) + 8v = 2v + 5(1 + v) + 6v$

$35 - 5v + 8v = 2v + 5 + 5v + 6v$

$35 + 3v = 13v + 5$

$-5 - 3v \quad -3v - 5$

$\frac{30}{10} = \frac{10v}{10}$

$3 = v$

7. $\frac{m}{m+9} = \frac{8}{9}$

$9m = 8m + 72$

$-8m \quad -8m$

$m = 72$

8. $\frac{8}{6} = \frac{d+9}{d-9}$

$8d - 72 = 6d + 54$

$-6d + 72 \quad -6d + 72$

$\frac{2d}{2} = \frac{126}{2}$

$d = 63$

Quadratic Equations

9. $w^2 + 7w - 3 = 0 - 3$
$+3 \quad +3$

$w^2 + 7w = 0$

$w(w+7) = 0$

$w = 0$ or -7

10. $8x^2 + 96x + 228 = 12$
$-12 \quad -12$

$\frac{8x^2}{8} + \frac{96x}{8} + \frac{216}{8} = \frac{0}{8}$

$x^2 + 12x + 27 = 0 \quad (x+3)(x+9) = 0$

$x = -3$ or -9

11. $m^2 + 10m - 94 = -6$
$+94 \quad +94$

$m^2 + 10m + 25 = 88 + 25$

$\sqrt{(m+5)^2} = \sqrt{113}$

$m + 5 = \sqrt{113}$

$m = -5 \pm \sqrt{113}$

12. $3x^2 - 70 = -11x$

$3x^2 + 11x - 70 = 0$

$= \frac{-11 \pm \sqrt{11^2 - 4(3)(-70)}}{2(3)}$

$= \frac{-11 \pm \sqrt{961}}{6} = \frac{-11 \pm 31}{6}$

$x = \frac{10}{3}$ or -7

Linear Functions

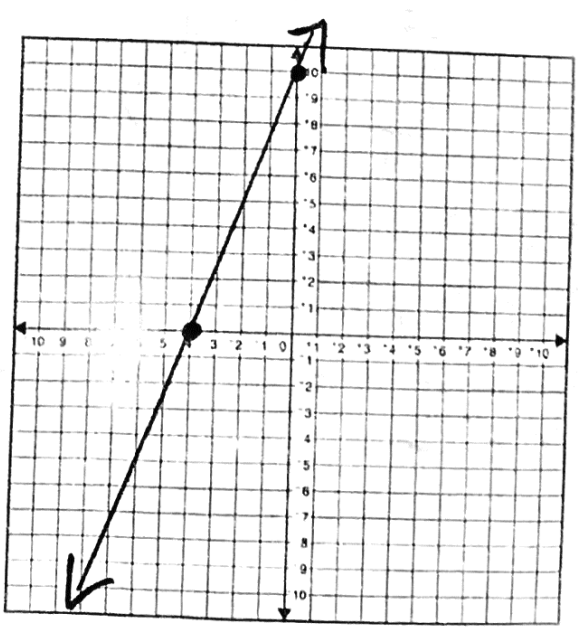
13. Find the slope of the line going through: $\left(2, \frac{17}{6}\right)$ and $\left(\frac{3}{2}, \frac{5}{6}\right)$

$\frac{\frac{5}{6} - \frac{17}{6}}{\frac{3}{2} - \frac{4}{2}} = \frac{\frac{-12}{6}}{-\frac{1}{2}} = -2 \times (-2) = 4$

14. Graph the equation: $5x - 2y = -20$

x – intercept $(-4, 0)$

y – intercept $(0, 10)$



15. $8x + 3y = 48$

x-intercept $(6, 0)$

y-intercept $(0, 16)$

Slope-Intercept Form $y = -8/3x + 16$

slope of a parallel line $-8/3$

$8x + 3y = 48$

$\frac{3y}{3} = \frac{-8x}{3} + \frac{48}{3}$

$y = -\frac{8}{3}x + 16$

16. Write the equation of a line in slope-intercept form that passes through (-6, -10) and is perpendicular to $9x - 2y = 36$.

$-9x \quad -9x$

$\frac{-2y}{-2} = \frac{-9x}{-2} + \frac{36}{-2}$

$y = \frac{9}{2}x - 18$

$m = \frac{9}{2}$

perpendicular slope $= -\frac{2}{9}$

$y + 10 = -\frac{2}{9}(x + 6)$

$y + 10 = -\frac{2}{9}x - \frac{4}{3}$

$-\frac{30}{3} \qquad -\frac{30}{3}$

$y = -\frac{2}{9}x - \frac{34}{3}$

Systems of Equations

Solve each system using substitution or elimination.

16. $\begin{cases} 3(6x - 6y) = -12 \cdot 3 \\ -18x + 18y = 36 \end{cases}$

$18x - 18y = -36$

$+ \quad -18x + 18y = 36$

$0 = 0$

infinitely many solutions

18. $\begin{cases} x + 3y = -15 \\ -3x - 4y = 20 \end{cases}$ $x = -3y - 15$

$-3(-3y-15) - 4y = 20$

$9y + 45 - 4y = 20$

$-45 \quad -45$

$\frac{5}{5}y = \frac{-25}{5}$

$y = -5$

$x = -3(-5) - 15$

$x = 15 - 15$

$x = 0$

$(0, -5)$

19. $\begin{cases} 4x + y = -21 \\ -4x + 8y = -24 \end{cases}$

$\frac{9}{9}y = \frac{-45}{9}$

$y = -5$

$4x - 5 = -21$

$+5 \quad +5$

$4x = -16$

$x = \frac{-16}{4}$

$x = -4$

$(-4, -5)$

Name _____

Accelerated Algebra Summer Work
August Problems

Linear Equations

Solve for the variable in the following equations.

1. $14 = 8p - 18$

$+18 \quad +18$

$\frac{32}{8} = \frac{8p}{8}$

$4 = p$

2. $\frac{3}{2}n + \frac{3}{8}n = -\frac{22}{15}$

$\frac{12}{8}n + \frac{3}{8}n = -\frac{22}{15}$

$\frac{8}{15} \times \frac{15}{8}n = -\frac{22}{15} \times \frac{8}{15}$ $\quad n = \frac{-176}{225}$

3. $4(9 - y) = 34$

$36 - 4y = 34$

$-36 \quad -36$

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

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

4. $16p - 14p + 2 + p = 37$

$3p + 2 = 37$

$-2 \quad -2$

$\frac{3p}{3} = \frac{35}{3}$

$p = \frac{35}{3}$

5. $3(2x - 5) - (x + 7) = 9(x - 8) + 15$

$6x - 15 - x - 7 = 9x - 72 + 15$

$5x - 22 = 9x - 57$

$-5x + 57 \quad -5x + 57$

$\frac{35}{4} = \frac{4x}{4}$ $\quad x = \frac{35}{4}$

6. $-7(v + 4) = -5v + 4(-7 - v)$

$-7v - 28 = -5v - 28 - 4v$

$-7v - 28 = -9v - 28$

$+9v + 28 \quad +9v + 28$

$2v = 0$

$v = 0$

7. $\frac{m-3}{2} = \frac{7}{10}$

$10(m - 3) = 14$

$10m - 30 = 14$

$+30 \quad +30$

$\frac{10m}{10} = \frac{44}{10}$

$m = \frac{22}{5}$

8. $\frac{9}{r+5} = \frac{10}{r+9}$

$9(r + 9) = 10(r + 5)$

$9r + 81 = 10r + 50$

$-9r - 50 \quad -9r - 50$

$31 = r$

Quadratic Equations

Solve each quadratic equation. Make sure you practice factoring, square roots, completing the square and the quadratic formula.

9. $5m^2 + 22m = 15$

$5m^2 + 22m - 15 = 0$

$5m^2 + 25m - 3m - 15 = 0$

$5m(m+5) - 3(m+5) = 0$

$(5m-3)(m+5) = 0$

$m = \frac{3}{5}$ or -5

-75 / 25 / -3 / 22

10. $4x^2 - 10 = -12$

$+10 \quad +10$

$\frac{4x^2}{4} = \frac{-2}{4}$

$x^2 = -\frac{1}{2}$

no solution

11. $m^2 - 18m + 68 = -4$

$m^2 - 18m + 72 = 0$

$(m-6)(m-12) = 0$

$m = 6$ or 12

72 / -6 / -12 / -18

12. $3x^2 + 2x = 4$

$3x^2 + 2x - 4 = 0$

$\frac{-2 \pm \sqrt{2^4 - 4(3)(-4)}}{2(3)}$

$x = -1.54$ or 0.87

Linear Functions

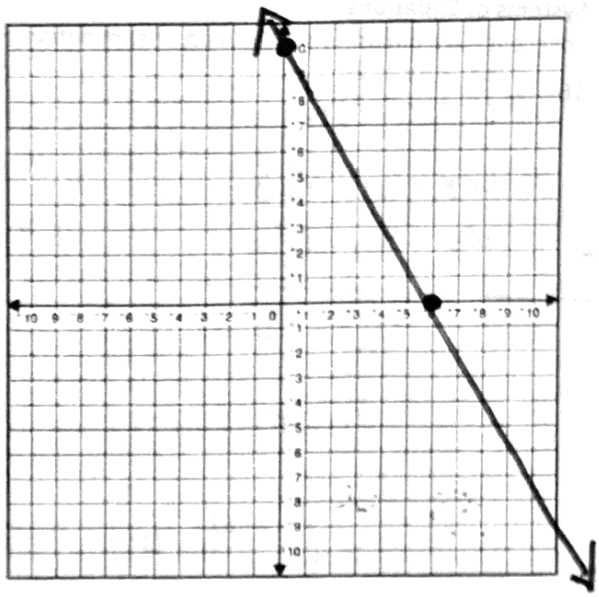
13. Find the slope of the line going through: $\left(-5, \frac{1}{3}\right)$ and $\left(\frac{4}{3}, 7\right)$

$$\frac{\frac{21}{3} - \frac{1}{3}}{\frac{4}{3} + \frac{15}{3}} = \frac{\frac{20}{3}}{\frac{19}{3}} = \frac{20}{3} \times \frac{3}{19} = \frac{20}{19}$$

14. Graph the equation: $5x + 3y = 30$

x – intercept $(6, 0)$

y – intercept $(0, 10)$



15. $7x + 3y = 42$

x-intercept $(6, 0)$

y-intercept $(0, 14)$

Slope-Intercept Form $y = -\frac{7}{3}x + 14$

slope of a parallel line $-7/3$

$$7x + 3y = 42$$
$$-7x \qquad -7x$$
$$\frac{3y}{3} = \frac{-7x}{3} + \frac{42}{3}$$
$$y = -\frac{7}{3}x + 14$$

16. Write the equation of a line in slope-intercept form that passes through (2, 9) and is perpendicular to $3x + y = 12$.

$y = -3x + 12$

$m = -3$

perpendicular slope $= \frac{1}{3}$

$$y - 9 = \frac{1}{3}(x - 2)$$
$$y - 9 = \frac{1}{3}x - \frac{2}{3}$$
$$+\frac{27}{3} \qquad +\frac{27}{3}$$
$$y = \frac{1}{3}x + \frac{25}{3}$$

Systems of Equations

Solve each system using substitution or elimination.

16. $\begin{cases} -16x - 6y = 28 \\ (8x + 4y = -8)2 \end{cases}$

$$\begin{array}{r} -16x - 6y = 28 \\ +\ 16x + 8y = -16 \\ \hline 2y = 12 \\ y = 6 \end{array}$$

$$\begin{array}{r} 8x + 4 \cdot 6 = -8 \\ 8x + 24 = -8 \\ -24 \quad -24 \\ \hline 8x = -32 \\ x = -4 \end{array}$$

$(-4, 6)$

17. $\begin{cases} -21x = 21 - 42y \\ 6x - 12y = -6 \end{cases}$

$2(-21x + 42y) = (21)2$

$7(6x - 12y) = (-6)7$

$$\begin{array}{r} -42x + 84y = 42 \\ +\ 42x - 84y = -42 \\ \hline 0 + 0 = 0 \end{array}$$

infinitely many solutions

18. $\begin{cases} -x + 5y = -7 \\ x - 4y = 4 \end{cases}$

$$\begin{array}{r} + \\ \hline y = -3 \end{array}$$

$$\begin{array}{r} x - 4(-3) = 4 \\ x + 12 = 4 \\ -12 \quad -12 \\ \hline x = -8 \end{array}$$

$(-8, -3)$