

Name: Answer Key

Date: _____

General and Functional Form

Change the following equations from the general form to the functional form.

1. $4x + 5y - 20 = 0$

$$\begin{aligned} 5y &= -4x + 20 \\ \frac{5y}{5} &= \frac{-4x}{5} + \frac{20}{5} \\ y &= -\frac{4}{5}x + 4 \end{aligned}$$

3. $8x + 12y - 4 = 0$

$$\begin{aligned} 12y &= -8x + 4 \\ \frac{12y}{12} &= \frac{-8x}{12} + \frac{4}{12} \\ y &= -\frac{2}{3}x + \frac{1}{3} \end{aligned}$$

5. $2x + y + 10 = 0$

$$y = -2x - 10$$

7. $9x + 8y - 72 = 0$

$$\begin{aligned} 8y &= -9x + 72 \\ \frac{8y}{8} &= \frac{-9x}{8} + \frac{72}{8} \\ y &= -\frac{9}{8}x + 9 \end{aligned}$$

9. $x + 5y + 8 = 0$

$$\begin{aligned} 5y &= -x - 8 \\ \frac{5y}{5} &= \frac{-x}{5} - \frac{8}{5} \\ y &= -\frac{1}{5}x - \frac{8}{5} \end{aligned}$$

11. $13x + 17y + 19 = 0$

$$\begin{aligned} 17y &= -13x - 19 \\ \frac{17y}{17} &= \frac{-13x}{17} - \frac{19}{17} \\ y &= -\frac{13}{17}x - \frac{19}{17} \end{aligned}$$

13. $7x + 5y - 11 = 0$

$$\begin{aligned} 5y &= -7x + 11 \\ \frac{5y}{5} &= \frac{-7x}{5} + \frac{11}{5} \\ y &= -\frac{7}{5}x + \frac{11}{5} \end{aligned}$$

15. $14x + 8y + 17 = 0$

$$\begin{aligned} 8y &= -14x - 17 \\ \frac{8y}{8} &= \frac{-14x}{8} - \frac{17}{8} \\ y &= -\frac{7}{4}x - \frac{17}{8} \end{aligned}$$

2. $-3x - 4y + 7 = 0$

$$\begin{aligned} -4y &= 3x - 7 \\ \frac{-4y}{-4} &= \frac{3x}{4} - \frac{7}{4} \\ y &= -\frac{3}{4}x + \frac{7}{4} \end{aligned}$$

4. $x + y + 5 = 0$

$$y = -x - 5$$

6. $10x + 20y - 19 = 0$

$$\begin{aligned} 20y &= -10x + 19 \\ \frac{20y}{20} &= \frac{-10x}{20} + \frac{19}{20} \\ y &= -\frac{1}{2}x + \frac{19}{20} \end{aligned}$$

8. $5x + 2y + 100 = 0$

$$\begin{aligned} 2y &= -5x - 100 \\ \frac{2y}{2} &= \frac{-5x}{2} - \frac{100}{2} \\ y &= -\frac{5}{2}x - 50 \end{aligned}$$

10. $7x + 3y - 42 = 0$

$$\begin{aligned} 3y &= -7x + 42 \\ \frac{3y}{3} &= \frac{-7x}{3} + \frac{42}{3} \\ y &= -\frac{7}{3}x + 14 \end{aligned}$$

12. $66x + 3y - 9 = 0$

$$\begin{aligned} 3y &= -66x + 9 \\ \frac{3y}{3} &= \frac{-66x}{3} + \frac{9}{3} \\ y &= -22x + 3 \end{aligned}$$

14. $-x + 6y - 14 = 0$

$$\begin{aligned} 6y &= 1x + 14 \\ \frac{6y}{6} &= \frac{1x}{6} + \frac{14}{6} \\ y &= \frac{1}{6}x + \frac{7}{3} \end{aligned}$$

16. $2x + 2y = 0$

$$\begin{aligned} 2y &= -2x \\ \frac{2y}{2} &= \frac{-2x}{2} \\ y &= -x \end{aligned}$$

Change the following equations from the functional form to the general form.

$$1. y = \left(\frac{3}{2}\right)x + 7$$

$$\begin{aligned} y &= \frac{3x}{2} + 7 \\ 0 &= \frac{3x}{2} - 1y + 7 \\ 0 &= 3x - 2y + 14 \\ 3x - 2y + 14 &= 0 \end{aligned}$$

$$2. y = -x + 9$$

$$\begin{aligned} y &= -x + 9 \\ 1x + 1y - 9 &= 0 \\ x + y - 9 &= 0 \end{aligned}$$

$$3. y = \left(\frac{2}{3}\right)x - 9$$

$$\begin{aligned} y &= \frac{2x}{3} - 9 \\ 0 &= \frac{2x}{3} - 1y - 9 \\ 0 &= 2x - 3y - 27 \\ 2x - 3y - 27 &= 0 \end{aligned}$$

$$4. y = \left(-\frac{3}{5}\right)x - \left(\frac{5}{3}\right)$$

$$\begin{aligned} 0 &= \frac{3x}{5} + 1y + \frac{5}{3} \\ \frac{45x}{5} + 15y + \frac{75}{3} &= 0 \\ 9x + 15y + 25 &= 0 \end{aligned}$$

$$5. y = -3x + \left(\frac{7}{2}\right)$$

$$\begin{aligned} 3x + 1y &= \frac{7}{2} \\ 3x + 2y - 7 &= 0 \end{aligned}$$

$$6. y = x + \left(\frac{9}{4}\right)$$

$$\begin{aligned} 0 &= -x - 1y + \frac{9}{4} \\ 0 &= 4x - 4y + 9 \\ 4x - 4y + 9 &= 0 \end{aligned}$$

$$7. y = -5x + \left(\frac{8}{3}\right)$$

$$\begin{aligned} 5x + 1y - \frac{8}{3} &= 0 \\ 15x + 3y - 8 &= 0 \end{aligned}$$

$$8. y = 34x + \left(\frac{17}{2}\right)$$

$$\begin{aligned} 0 &= -34x - 1y + \frac{17}{2} \\ 0 &= 68x - 2y + 17 \end{aligned}$$

$$9. y = 14x - \left(\frac{8}{3}\right)$$

$$\begin{aligned} 0 &= -14x - 1y - \frac{8}{3} \\ 42x - 3y - 8 &= 0 \end{aligned}$$

$$10. y = -4x + 22$$

$$4x + 1y - 22 = 0$$

$$11. y = x$$

$$1x - 1y = 0$$

$$12. y = \left(\frac{1}{2}\right)x + \left(\frac{2}{3}\right)$$

$$\begin{aligned} 0 &= \frac{1x}{2} - 1y + \frac{2}{3} \\ 0 &= 6x - 6y + \frac{12}{3} \\ 3x - 6y + 4 &= 0 \end{aligned}$$

$$13. y = 16$$

$$1y - 16 = 0$$

$$14. y = \left(-\frac{1}{4}\right)x - (16)$$

$$\begin{aligned} \frac{1x}{4} + 1y + 16 &= 0 \\ 1x + 4y + 64 &= 0 \end{aligned}$$

$$15. y = 9x + 81$$

$$9x - 1y + 81 = 0$$

$$16. y = 0$$

$$y = 0$$