

# Term 3 Review Part 1

May-31-17  
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## Mathematics 9 Term 3 Review

### A. RATIONAL NUMBERS

1. Solve the following.

$$\begin{aligned} \text{a) } & -\frac{1^3}{2^3} + \frac{1}{6} \\ & \frac{-3}{6} + \frac{1}{6} \\ & = \frac{-2}{6} = \boxed{-\frac{1}{3}} \end{aligned}$$

$$\begin{aligned} \text{b) } & \left(1\frac{3}{4}\right) - \left(4\frac{5}{8}\right) \\ & \frac{7^2}{4^2} - \frac{37}{8} \\ & \frac{14}{8} - \frac{37}{8} \\ & = \boxed{-\frac{23}{8} \text{ or } -2\frac{7}{8}} \end{aligned}$$

$$\begin{aligned} \text{c) } & \left(-\frac{1}{4}\right) \times \left(-\frac{2}{3}\right) \\ & = \frac{2}{12} = \boxed{\frac{1}{6}} \end{aligned}$$

$$\begin{aligned} \text{d) } & \left(-2\frac{1}{3}\right) \div \left(-\frac{9}{12}\right) \\ & -\frac{7}{3} \times \frac{-12}{9} \\ & = \boxed{\frac{28}{9} \text{ or } 3\frac{1}{9}} \end{aligned}$$

$$\begin{aligned} \text{e) } & \left(1\frac{1}{2} \times \frac{2}{5}\right) + \left(-1\frac{1}{4} \div \frac{1}{2}\right) \text{ BEDMAS.} \\ & \left(\frac{3}{2} \times \frac{2}{5}\right) + \left(-\frac{5}{4} \times \frac{2}{1}\right) = \frac{3^2}{5^2} + \frac{-5^2}{2^2} \\ & \frac{6}{10} + \frac{-25}{10} = \boxed{-\frac{19}{10} \text{ or } -1\frac{9}{10}} \end{aligned}$$

2. Solve  $\sqrt{2\frac{7}{9}}$

$$\sqrt{\frac{25}{9}} = \frac{\sqrt{25}}{\sqrt{9}} = \boxed{\frac{5}{3} \text{ or } 1\frac{2}{3}}$$

B. LINEAR RELATIONS

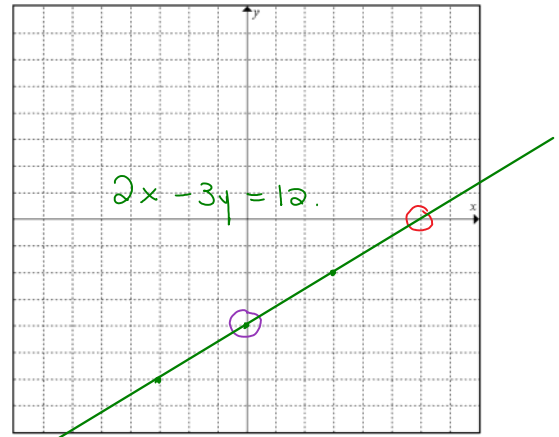
1. For the following linear equation, create a table of values of 3 acceptable points and then graph and label the linear equation. Then find the coordinates of the x-intercept and the y-intercept.

$$2x - 3y = 12$$

x	y
3	-2
-3	-6
0	-4

$$\begin{aligned} 2(3) - 3y &= 12 & 2(-3) - 3y &= 12 \\ 6 - 3y &= 12 & -6 - 3y &= 12 \\ \underline{-6} & & \underline{+6} & \\ -3y &= 6 & -3y &= 18 \\ \underline{-3} & & \underline{-3} & \\ y &= -2 & y &= -6 \end{aligned}$$

$$\begin{aligned} 2(0) - 3y &= 12 \\ -3y &= 12 \\ \underline{-3} & \\ y &= -4 \end{aligned}$$



X-intercept ( 6 , 0 )

Y-intercept ( 0 , -4 )

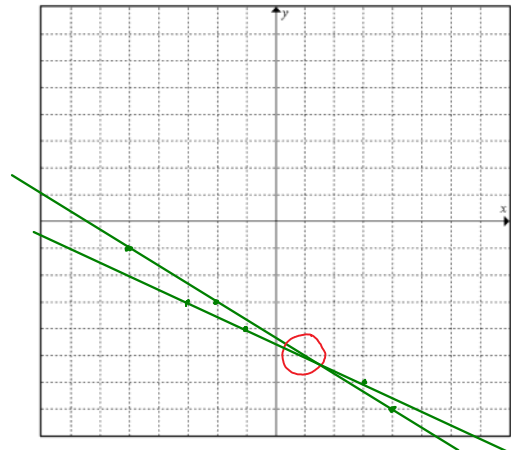
2. Graph the following pair of linear equations and find the solution set.

$$2x + 3y = -13 \quad x + 2y = -9$$

x	y	x	y
-2	-3	-1	-4
-5	-1	-3	-3
4	-7	3	-6

$$\begin{aligned} 2(-2) + 3y &= -13 & 2(-5) + 3y &= -13 & 2(4) + 3y &= -13 \\ -4 + 3y &= -13 & -10 + 3y &= -13 & 8 + 3y &= -13 \\ \underline{+4} & & \underline{+10} & & \underline{-8} & \\ 3y &= -9 & 3y &= -3 & 3y &= -21 \\ \underline{3} & & \underline{3} & & \underline{3} & \\ y &= -3 & y &= -1 & y &= -7 \end{aligned}$$

$$\begin{aligned} (-1) + 2y &= -9 & (-5) + 2y &= -9 & (2) + 2y &= -9 \\ \underline{+1} & & \underline{+5} & & \underline{-2} & \\ 2y &= -8 & 2y &= -4 & 2y &= -11 \\ \underline{2} & & \underline{2} & & \underline{2} & \\ y &= -4 & y &= -2 & y &= -5.5 \end{aligned}$$



Solution Set ( -1 , -5 )

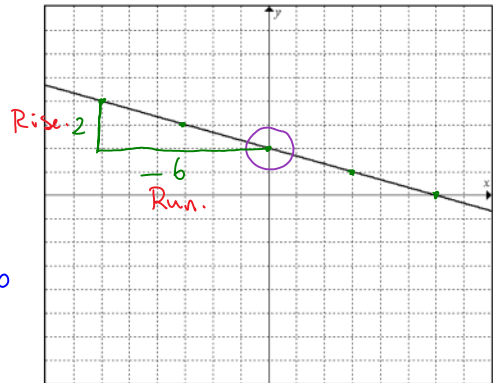
3. Find the slope and the coordinates of the y-intercept for the following line. Then write the equation of the line in slope-intercept form.

$$\text{slope} = \frac{\text{Rise}}{\text{Run}} = \frac{2}{-6} = \boxed{-\frac{1}{3}}$$

$$\text{y-int } (0, 2)$$

Slope-intercept form  $y = mx + b$

$$\boxed{y = -\frac{1}{3}x + 2}$$



4. For the equation  $y = \frac{2}{3}x + b$ , what is the value of  $b$  if the line passes through the point  $(6, 2)$ ?

$$(2) = \frac{2}{3}(6) + b$$

$$-2 = 4 + b$$

$$-2 = b$$

$$\boxed{b = -2}$$

5. For the equation  $y = mx - 5$ , what is the value of  $m$  if the line passes through the point  $(-4, -3)$ ?

$$(-3) = m(-4) - 5$$

$$-3 = -4m - 5$$

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

$$\boxed{m = -\frac{1}{2}}$$

Assignment : Term 3 Review Assignment

Name: \_\_\_\_\_

Term 3 Review Assignment

A. Solve the following.

1.  $\frac{3}{9} + \frac{8}{27}$

2.  $\frac{1}{5} - \left(-\frac{4}{7}\right)$

3.  $\left(-4\frac{1}{2}\right) - 1\frac{1}{3}$

4.  $4\frac{1}{2} + \left(-\frac{5}{6}\right)$

5.  $\left(\frac{-4}{-6}\right) \times \left(\frac{-9}{10}\right)$

6.  $\left(-\frac{7}{27}\right) \div \left(\frac{14}{-15}\right)$

7.  $\left(-3\frac{1}{5}\right) \times 2\frac{1}{4}$

8.  $\left(-5\frac{1}{2}\right) \div \left(-2\frac{5}{6}\right)$

9.  $\frac{-1}{8} \div \frac{1}{2} + \frac{1}{4} \times \frac{2}{3}$

10.  $\left(-1\frac{1}{4} + \frac{1}{2}\right) - \left(\frac{1}{4} \times 1\frac{1}{3}\right)$

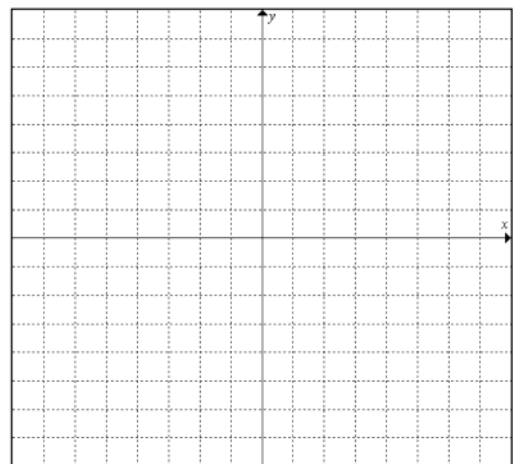
11.  $\sqrt{\frac{144}{81}}$

12.  $\sqrt{\frac{3}{8} \div \frac{8}{12}}$

B. Graph and label the following equations and then identify the coordinates of the X-intercept and the Y-intercept.

13.  $x + 2y = 8$

x	y

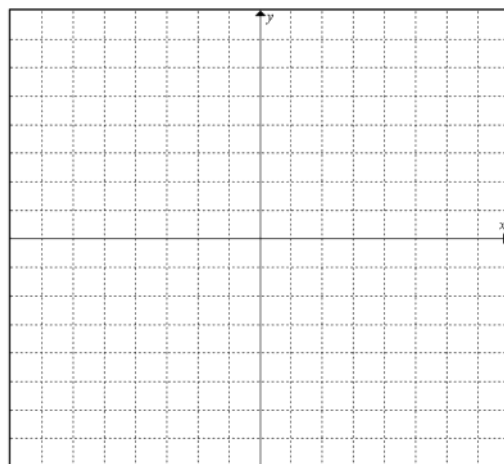


X-intercept (     ,     )

Y-intercept (     ,     )

14.  $y = -\frac{2}{3}x - 2$

x	y



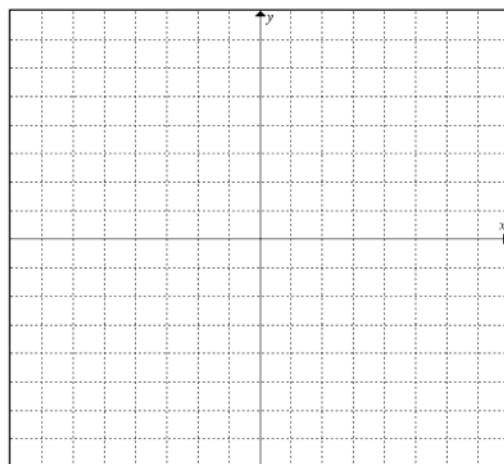
X-intercept (     ,     )

Y-intercept (     ,     )

C. Graph the following pair of linear equations and find the solution set.

15.  $3x + 2y = 18$       $x - y = 1$

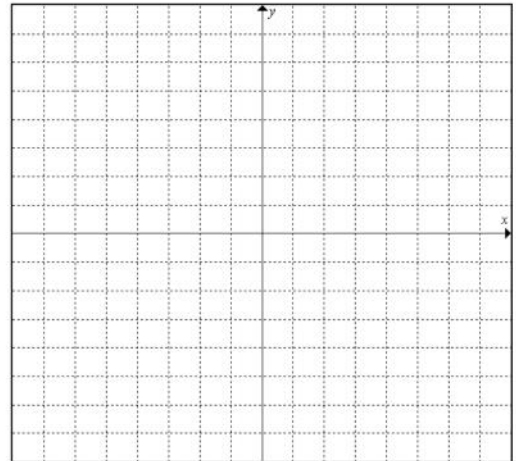
x	y	x	y



Solution Set (     ,     )

16.  $6x + y = -11$     $x - 3y = -5$

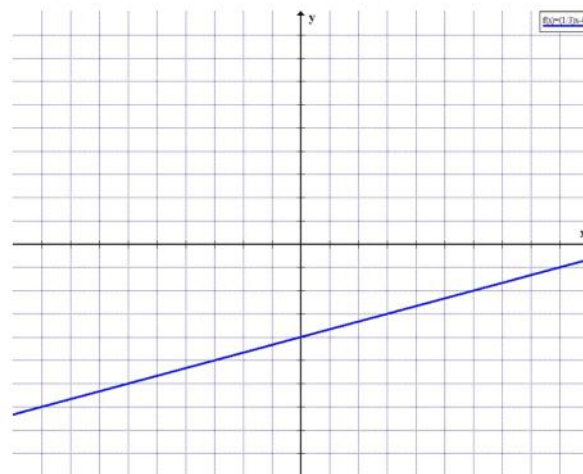
x	y	x	y



Solution Set (     ,     )

D. Find the slope, the coordinates of the y-intercept and the equation of the following lines.

17.



Answers

- A. 1)  $\frac{17}{27}$       2)  $\frac{27}{35}$       3)  $-\frac{35}{6}$       4)  $\frac{11}{3}$   
5)  $-\frac{3}{5}$       6)  $\frac{5}{18}$       7)  $-\frac{36}{5}$       8)  $\frac{33}{17}$   
9)  $-\frac{1}{12}$       10)  $-\frac{13}{12}$       11)  $\frac{4}{3}$       12)  $\frac{3}{4}$
- B. 13) X-intercept (8, 0)      14) X-intercept (-3, 0)  
Y-intercept (0, 4)      Y-intercept (0, -2)
- C. 15) (4, 3)      16) (-2, 1)
- D. 17)  $y = \frac{1}{3}x - 4$