

12.03.18

$$\begin{aligned}
 20. \text{ (a)} \quad & \frac{5}{6} - \frac{3}{14} \\
 &= \frac{5 \cdot 7}{6 \cdot 7} - \frac{3 \cdot 3}{14 \cdot 3} \\
 &= \frac{35}{42} - \frac{9}{42} \\
 &= \frac{35-9}{42} \\
 &= \frac{\cancel{26}^{13}}{\cancel{42}^{21}} \\
 &= \frac{13}{21}
 \end{aligned}$$

$$\begin{aligned}
 21. \quad & \frac{11}{12} - \frac{1}{4} - \frac{1}{3} \\
 &= \frac{11}{12} - \frac{3}{12} - \frac{4}{12} \\
 &= \frac{\cancel{11} - 3 - 4}{12} \\
 &= \frac{11-7}{12} = \frac{\cancel{4}^1}{\cancel{12}^3} = \frac{1}{3}
 \end{aligned}$$

$$\begin{aligned}
 22. \text{ (a)} \quad & \frac{3}{10} + \frac{7}{4} \left(\frac{4}{15} \right) \\
 &= \frac{3}{10} + \frac{7}{\cancel{4}} \cdot \frac{\cancel{4}^1}{15} \\
 &= \frac{3}{10} + \frac{7}{15} \\
 &= \frac{3}{\cancel{10}^3} \cdot \frac{3}{3} + \frac{7}{15} \cdot \frac{2}{2} \\
 &= \frac{9}{30} + \frac{14}{30} \\
 &= \frac{23}{30}
 \end{aligned}$$

$$\begin{aligned}
 22. \text{ (b)} \quad & \left(\frac{3}{4} + \frac{1}{6} \right) \cdot \left(\frac{9}{11} \right) \\
 &= \left(\frac{3}{4} \cdot \frac{3}{3} + \frac{1}{6} \cdot \frac{2}{2} \right) \cdot \left(\frac{9}{11} \right) \\
 &= \left(\frac{9}{12} + \frac{2}{12} \right) \cdot \left(\frac{9}{11} \right) \\
 &= \left(\frac{\cancel{11}}{\cancel{12}^4} \right) \cdot \left(\frac{\cancel{9}^3}{\cancel{11}} \right) \\
 &= \frac{9}{4}
 \end{aligned}$$

$$\begin{aligned}
 23. \quad & 75 + 2.3(3.74 + 2.2) - (2.1)^2 \\
 &= 75 + 2.3(5.94) - 4.41 \\
 &= 75 + 13.662 - 4.41 \\
 &= 84.252
 \end{aligned}$$

$$24. \quad 0.2020, 0.220, 0.2002, 0.022, 0.2202, \frac{1}{50}$$

\parallel
 0.0200

$$0.0022, \frac{1}{50}, 0.2002, 0.202, 0.22, 0.2202$$

$$\begin{aligned}
 25. \quad (a) \quad & \frac{21}{7} = \frac{8}{x} \\
 & \Rightarrow 21 \cdot x = 7 \cdot 8 \\
 & \Rightarrow x = \frac{7 \cdot 8}{21} \\
 & \therefore x = \frac{8}{3}
 \end{aligned}$$

$$\begin{aligned}
 25. \quad (b) \quad & \frac{7}{2.8} = \frac{6.5}{x} \\
 & \Rightarrow 7x = 6.5 \times 2.8 \\
 & \Rightarrow x = \frac{6.5 \times 2.8}{7} \\
 & \therefore x = 2.6
 \end{aligned}$$

$$28. (b) \quad -12 + (-21) - |-35|$$

$$= -12 - 21 - 35$$

$$= -68$$

31. (b)

$$\frac{3n^v + 5m}{2(m+n)}$$

$$= \frac{3 \cdot 3^v + 5(-4)}{2(-4+3)}$$

$$= \frac{27 - 20}{2(-1)}$$

$$= \frac{7}{-2}$$

31. (c) $A = \pi r^v$

$$= (3 \cdot 14) \cdot (9)^v$$

$$= (3 \cdot 14) (81)$$

$$= 254 \cdot 34$$

32.

$$3(2k-5) - (2k-5) - 8k$$

$$= 6k - 15 - 2k + 5 - 8k$$

$$= -4k - 10$$

34. (a) $\frac{7}{2}x - 9 = \frac{5}{4}x$

$$\Rightarrow \frac{7}{2}x - \frac{5}{4}x = 9$$

$$\Rightarrow \frac{7}{2}x \cdot \frac{2}{2} - \frac{5}{4}x = 9$$

$$\Rightarrow \frac{14x}{4} - \frac{5x}{4} = 9$$

$$\Rightarrow \frac{9x}{4} = 9$$

$$\Rightarrow x = \cancel{9}x \frac{4}{\cancel{9}}$$

$$\therefore x = 4$$

35. (a) $\frac{7ab}{7a} = \frac{3c}{7a}$ for b

$\Rightarrow b = \frac{3c}{7a}$

35. (b) $3x - 4y = 8$ for y

$\Rightarrow \frac{-4y}{-4} = \frac{8 - 3x}{-4}$

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

37. (a) $x, x+2, x+4$

$4x = 98 + x + 2 + x + 4$

$\Rightarrow 4x = 2x + 104$

$\Rightarrow \frac{4x}{-2x} = \frac{2x}{-2x} + 104$

$\Rightarrow \frac{2x}{2} = \frac{104}{2}$

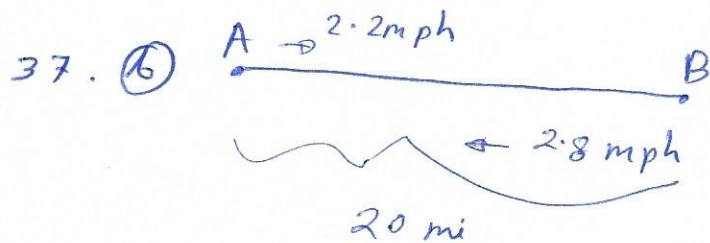
$\Rightarrow x = 52$

so, the integers are -

$\therefore x+2 = 52+2 = 54$

$\therefore x+4 = 52+4 = 56$

52, 54 & 56



after x hr. they meet.

$$2.2x + 2.8x = 20$$

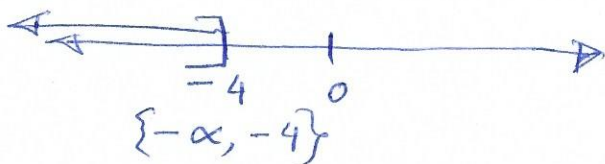
$$\Rightarrow \frac{5x}{5} = \frac{20}{5}$$

$$\therefore x = 4 \text{ hr.}$$

38. (a) $3x - 5 \leq -17$

$$\Rightarrow \frac{3x}{3} \leq \frac{-12}{3}$$

$$\Rightarrow x \leq -4$$



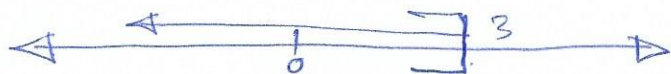
38. (b) $5p + 15 - 8p \geq 9 - p$

$$\Rightarrow 6p + 15 \geq 9 - 0$$

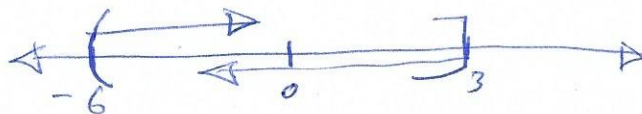
$$\Rightarrow \frac{-2p + 15}{-2} \geq \frac{9 - 15}{-2}$$

$$\Rightarrow \frac{-2p}{-2} \geq \frac{-6}{-2}$$

$$\therefore p \leq 3$$



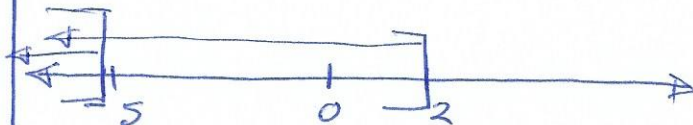
39. (a) $x \leq 3$ $\left\{ \frac{-x < 6}{(-1)} \right\}$
 $\Rightarrow x > -6$



$$(-6, 3], \{ -6 < x \leq 3 \}$$

39. (b) $\frac{-x \geq 5}{(-1)}$ or $x \leq 2$

$$\Rightarrow x \leq -5 \text{ or } x \leq 2$$



$$(-\infty, 2], \{ x \mid -\infty < x \leq 2 \}$$

$$(-\infty, 3]$$