

1. $2 \times 5 - 2 = 10 - 2 = 8$ and $2 \times (5 - 2) = 2 \times 3 = 6$

2.

$$\begin{aligned} \frac{-4}{6} + \frac{5}{17} &= \frac{-4 \times 17}{6 \times 17} + \frac{5 \times 6}{17 \times 6} \\ &= \frac{-68 + 30}{102} \\ &= \frac{-38}{102} \\ &= -\frac{\cancel{2} \times 19}{\cancel{2} \times 51} \\ &= -\frac{19}{51} \end{aligned}$$

3.

$$\begin{aligned} \frac{12}{11} \div \frac{9}{14} &= \frac{12}{11} \times \frac{14}{9} \\ &= \frac{\cancel{3} \times 4}{11} \times \frac{14}{\cancel{3} \times 3} \\ &= \frac{4}{11} \times \frac{14}{3} \\ &= \frac{4 \times 14}{11 \times 3} \\ &= \frac{56}{33} \\ &= 1\frac{23}{33} \end{aligned}$$

4.

$$\begin{aligned} \left(\frac{-3}{-10} - \frac{-39}{40} \right) \times \frac{52}{-13} + \frac{-12}{-2} &= \left(\frac{3 \times 4}{10 \times 4} + \frac{39}{40} \right) \times \frac{52}{-13} + \frac{-12}{-2} \\ &= \frac{12 + 39}{40} \times \frac{52}{-13} + \frac{-12}{-2} \\ &= \frac{51}{40} \times \frac{52}{-13} + \frac{-12}{-2} \\ &= \frac{51}{\cancel{4} \times 10} \times \frac{\cancel{13} \times \cancel{4} \times (-1)}{\cancel{13}} + \frac{-12}{-2} \\ &= \frac{51}{10} \times \frac{-1}{1} + \frac{-12}{-2} \\ &= \frac{51 \times (-1)}{10 \times 1} + \frac{-12}{-2} \\ &= \frac{-51}{10} + \frac{-12}{-2} \\ &= \frac{-51}{10} + \frac{12 \times 5}{2 \times 5} \\ &= \frac{-51 + 60}{10} \\ &= \frac{9}{10} \end{aligned}$$

5.

$$\begin{aligned}\frac{1}{14} - \frac{-15}{7} &= \frac{1}{14} + \frac{15 \times 2}{7 \times 2} \\ &= \frac{1 + 30}{14} \\ &= \frac{31}{14} \\ &= 2\frac{3}{14}\end{aligned}$$

6.

$$\begin{aligned}\frac{12}{5} \times \frac{-6}{15} &= \frac{12}{5} \times \frac{\cancel{3} \times (-2)}{\cancel{3} \times 5} \\ &= \frac{12}{5} \times \frac{-2}{5} \\ &= \frac{12 \times (-2)}{5 \times 5} \\ &= \frac{-24}{25} \\ &= -\frac{24}{25}\end{aligned}$$

7. $-|39.9| = -39.9$

8. Substituting for z into the equation gives $2x - 3 = 6$, so $2x = 6 + 3$, so $2x = 9$, so $\frac{2x}{2} = \frac{9}{2}$

Hence $x = \frac{9}{2}$

9. $|-6y - 6| = 0$, so

$$\begin{aligned}-6y - 6 &= 0 \\ -6y &= 6 \\ \frac{-6y}{-6} &= \frac{6}{-6}\end{aligned}$$

Hence the solution is: $y = -1$

10. $\frac{-10x^{-5}x^{-2}}{x^4x^{-2}} = \frac{-10x^{-5-2}}{x^{4-2}} = \frac{-10x^{-7}}{x^2} = -10x^{-7-2} = -10x^{-9}$

11. $2y(1 - 4y) = 1 \times 2y - 4y \times 2y = 2y - 8y^2$

12. $(4z + 5)(1 - 6z) = 4z \times 1 + 4z \times (-6z) + 5 \times 1 + 5 \times (-6z) = 4z - 24z^2 + 5 - 30z = -24z^2 - 26z + 5$

13. $\frac{-2x}{3} = 0$

Hence solution is: $x = 0$

14. $6 + \frac{-5}{5z} = 0$, so $\frac{-1}{z} = -6$, so $-1 = -6z$, so $z = \frac{-1}{-6}$

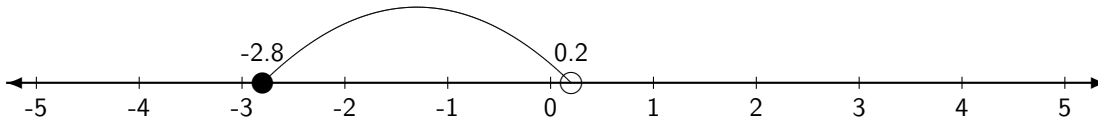
Hence solution is: $z = \frac{1}{6}$

15.

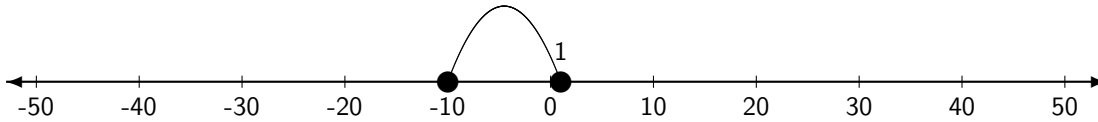
$$\begin{aligned}\frac{-9}{18} - \frac{-3}{-9} &= \frac{-9}{18} - \frac{3 \times 2}{9 \times 2} \\ &= \frac{-9 - 6}{18} \\ &= \frac{-15}{18} \\ &= -\frac{\cancel{3} \times 5}{\cancel{3} \times 6} \\ &= -\frac{5}{6}\end{aligned}$$

Hence solution is: $z = -\frac{5}{6}$

16. In interval form the answer is $[-2.8, 0.2)$ and on a real line the answer is:



17. In inequality form the answer is $-10 \leq x \leq 1$ and on a real line the answer is:



18. $-1 = -5x + 2$, so $-1 - 2 = -5x$, so $-3 = -5x$, so $\frac{-3}{-5} = \frac{-5x}{-5}$

Hence $x = \frac{3}{5}$

19. $5y - 2 = 6$, so $5y = 6 + 2$, so $5y = 8$, so $\frac{5y}{5} = \frac{8}{5}$

Hence $y = \frac{8}{5}$

20.

$$\begin{aligned}10x + 3 &\geq 6x + 3 \\ 10x + 3 - 3 &\geq 6x + 3 - 3 \\ 10x &\geq 6x \\ 10x - 6x &\geq 6x - 6x \\ 4x &\geq 0 \\ 4x \div 4 &\geq 0 \div 4 \\ x &\geq 0\end{aligned}$$

In interval format the answer is $[0, \infty)$, and on a real line the answer is:

