

# Solve one- and two-step equations and inequalities

R



1 Solve the equations.

a)  $p + 8 = 17$

$p = \boxed{9}$

c)  $v - 7 = -2$

$v = \boxed{5}$

e)  $\frac{t}{7} = 3$

$t = \boxed{21}$

b)  $y - 3 = 6$

$y = \boxed{9}$

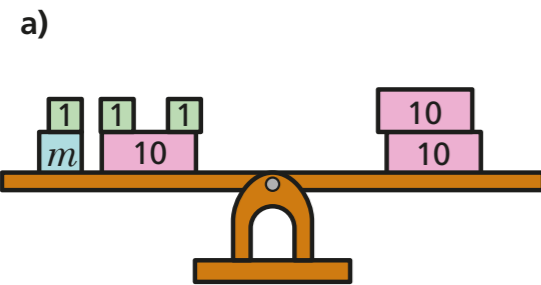
d)  $4h = 17$

$h = \boxed{\frac{17}{4}}$

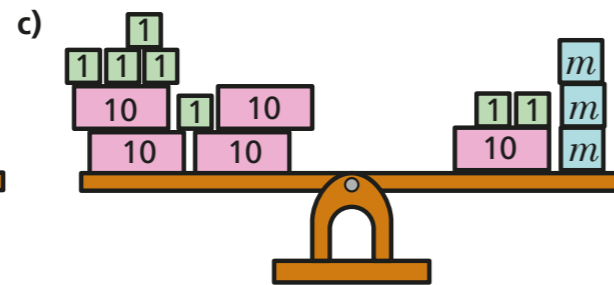
f)  $-35 = 5r$

$r = \boxed{-7}$

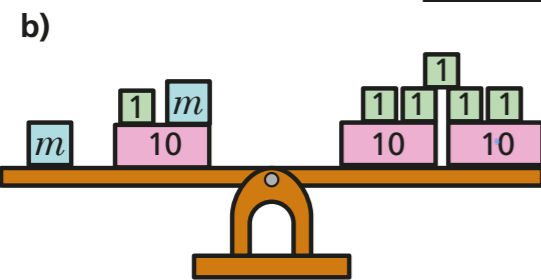
2 Work out the unknown value for each set of scales.



$m = \boxed{7}$



$m = \boxed{11}$



$m = \boxed{7}$

3 Circle the value of  $m$  that does not satisfy the inequality.

a)  $m < 4$

0                      6                      -8                      1.8

b)  $-2 \leq m < 5$

-2                      -1                      2                      5

c)  $2m \geq -6$

12                      0                      -12                      -3

d)  $2m - 5 \leq 0$

-5                      2.5                      0                      5

4 Solve the inequalities.

a)  $x + 6 > 2$

b)  $w - 12 \leq 2$

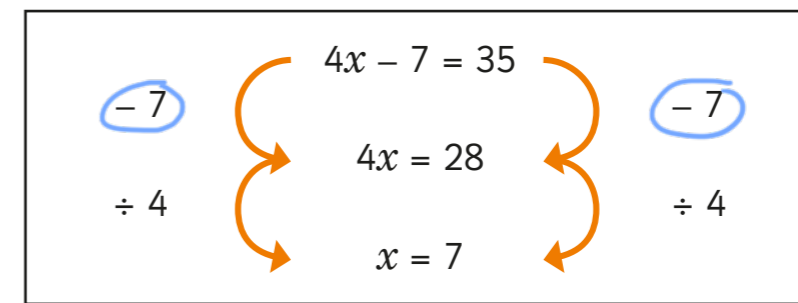
c)  $2p \geq 8$

$x > -4$

$w \leq 14$

$p \geq 4$

5 Huan has attempted to solve this equation.



Find and correct his error.

$4x - 7 = 35$   
 $+7$                        $+7$   
 $4x = 42$   
 $\div 4$                        $\div 4$   
 $x = \frac{21}{2}$

$x = \boxed{\frac{21}{2}}$

6 Solve the equations.

a)  $3w + 6 = 3$

$w = \boxed{-1}$

d)  $-4k - 2 = 10$

$k = \boxed{-3}$

b)  $\frac{m}{2} - 8 = -3$

$m = \boxed{10}$

e)  $\frac{1}{3}b - 3 = 3$

$b = \boxed{18}$

c)  $-3 = -v + 7$

$v = \boxed{10}$

f)  $20 - 5n = -35$

$n = \boxed{11}$

7 Filip is solving an equation.

$$\begin{array}{ccc} -3 & \left. \begin{array}{c} 2x + 3 = 17 \\ 2x = 14 \\ x = 7 \end{array} \right\} & -3 \\ \div 2 & & \div 2 \end{array}$$

Discuss how Filip can adapt this method to solve  $2x + 3 < 17$

8 Solve the inequalities.

a)  $5x + 2 > 27$

$x > 5$

c)  $10 < 3p - 1$

$p > \frac{11}{3}$

b)  $3x - 9 \leq 36$

$x \leq 15$

d)  $12 \geq 7 + 4t$

$t \leq \frac{5}{4}$

9 Find all of the integer values that satisfy the inequalities.

a)  $-4 \leq 2k < 11$       $-2 \leq k < 5.5$

$-2, -1, 0, 1, 2, 3, 4, 5$

b)  $-2 < k + 3 \leq 8.5$       $-5 < k \leq 5.5$

$-4, -3, -2, -1, 0, 1, 2, 3, 4, 5$

c)  $-3 \leq 2k + 3 \leq 3$       $-3 \leq k \leq 0$

$-3, -2, -1, 0$

10 Esther is solving an inequality. Find and correct her mistake.

$$\begin{array}{ccc} -8 & \left. \begin{array}{c} -3x + 8 < -4 \\ -3x < -12 \\ x < 4 \end{array} \right\} & -8 \\ \div -3 & & \div -3 \end{array}$$

$x > 4$

11 Solve the inequalities.

a)  $10 - 2x > 36$

$x < -13$

b)  $45 \leq 70 - 5y$

$y \leq 5$

