

SOLVING ALGEBRAIC EQUATIONS

1. Solve for k: $5k-3=3k+9$

$$\begin{aligned} 5k-3 &= 3k+9 \\ 5k-3+3 &= 3k+9+3 \\ 5k &= 3k+12 \\ 5k-3k &= 3k-3k+12 \\ 2k &= 12 \\ \frac{2k}{2} &= \frac{12}{2} \\ k &= 6 \end{aligned}$$

2. Solve for h: $4(2h+5)=5(h-2)$

$$\begin{aligned} 4(2h+5) &= 5(h-2) \\ 4 \times 2h + 5 \times 4 &= 5h - 2 \times 5 \\ 8h + 20 &= 5h - 10 \\ 8h + 20 - 20 &= 5h - 10 - 20 \\ 8h &= 5h - 30 \\ 8h - 5h &= 5h - 5h - 30 \\ 3h &= -30 \\ \frac{3h}{3} &= \frac{-30}{3} \\ h &= -10 \end{aligned}$$

3. Solve for p: $3(2p+5)=21$

$$\begin{aligned} 3(2p+5) &= 21 \\ 3 \times 2p + 5 \times 3 &= 21 \\ 6p + 15 &= 21 \\ 6p + 15 - 15 &= 21 - 15 \\ 6p &= 6 \\ \frac{6p}{6} &= \frac{6}{6} \\ p &= 1 \end{aligned}$$

ACTIVITY

1. Solve the following equations

a. $2x + 5 = x + 8$

b. $2y - 3 = y + 2$

c. $5e + 6 = 4e + 3$

d. $4m + 15 = m + 6$

e. $3a + 4 = a + 8$

f. $3b - 5 = b + 9$

g. $h + 6 = 2h + 4$

h. $7 + 2q = 4q + 7$

i. $2b + 8 = 5b - 4$

j. $4k + 2 = 2k - 6$

Solving equations involving brackets

1. Solve the following equations

a. $2(x+4)=12$

b. $3(y+4)=3$

c. $4(a-2)=8$

d. $5(k-4)=-5$

e. $-2(w+3)=4$

f. $-3(q-5)=9$

g. $6(2n+3)=24$

h. $3(2-2p)=12$

i. $2(4+m)=m+8$

j. $3(p+2)=2(m+5)$

k. $4(h-3)=2(h+4)$

l. $3(2x+5)=4(2+x)$

m. $2(2y+7)=3(3y-2)$

Solving equations involving brackets

1. Solve the following equations;

a. $(p+1)+(p+2)=7$

b. $(a-1)-(1-a)=0$

c. $(2x-2)+(x-3)=10$

d. $(n-6)+(2n+4)=4$

e. $(2k+8)+(k-2)=0$

f. $(3y-4)-(y+6)=2$

g. $(4a-5)-(2a-3)=6$

h. $(5h+3)-(h-5)=4$

i. $(2m-5)-(4-m)=1$

j. $3(q+2)+(q+6)=8$