

CHAPTER 3 : ALGEBRA AND POLYNOMIAL

Check Point 1

① a) $p+1+q-m$; $m=1$, $p=3$, $q=4$
 $= 3+1+4-1$
 $= 8-1$
 $= 7$

c) $k \times 3^2 - (j+k) - 5$; $j=4$, $k=5$
 $= 5 \times 3^2 - (4+5) - 5$
 $= 5 \times 9 - 9 - 5$
 $= 45 - 4$
 $= 41$

b) $\frac{6+z-y}{3}$; $y=1$, $z=4$
 $= \frac{6+4-1}{3}$
 $= \frac{9}{3}$
 $= 3$

d) $3+z-1+y-1$; $y=5$, $z=4$
 $= 3+4-1+5-1$
 $= 6+4$
 $= 10$

② Combine like terms

a) $m-2m$
 $= -m$

f) $-8p+5p$
 $= -3p$

b) $v-q+10$
 $= v-1$

g) $-4b+9b$
 $= 5b$

c) $x-10-6x+1$
 $= x-6x+1-10$
 $= -5x-9$

d) $1-v-q$
 $= -v-q+1$
 $= -v-8$

e) $9n-1+n+4$
 $= 9n+n+4-1$
 $= 10n+3$

Checked
5/9/18

③ Use the distributive property to simplify the expression

$$a) -(-5 + 9a)$$

$$= 5 - 9a$$

$$g) -8n(5 + 10n)$$

$$= -40n - 80n^2$$

$$b) 4(8n - 2)$$

$$= 32n - 8$$

$$h) (-4d + 1)(-2)$$

$$= 8d - 2$$

$$c) -9b(b - 10)$$

$$= -9b^2 + 90b$$

$$i) (7x - 8)(-1)$$

$$= -7x + 8$$

$$d) 8n(n + 9)$$

$$= 8n^2 + 72n$$

$$j) 2(4 + 9w)$$

$$= 8 + 18w$$

$$e) -8(x - 4)$$

$$= -8x + 32$$

$$k) -9(8 - 2h)$$

$$= -72 + 18h$$

$$f) 7k(-k + 6)$$

$$= -7k^2 + 42k$$

④ Simplify the expression below

$$a) 4v - 7(1 - 8v)$$

$$= 4v - 7 + 56v$$

$$= 4v + 56v - 7$$

$$= 60v - 7$$

$$c) -2(4 + a) + 6a(9a + 10)$$

$$= -8 - 2a + 54a^2 + 60a$$

$$= 54a^2 + 60a - 2a - 8$$

$$= 54a^2 + 58a - 8$$

$$b) -8x + 9(-9x + 9)$$

$$= -8x - 81x + 81$$

$$= -89x + 81$$

$$d) -9 - 10(1 + 10a)$$

$$= -9 - 10 - 100a$$

$$= -100a - 9 - 10$$

$$= -100a - 19$$

$$e) (5p-6)+(1-p)$$

$$= 5p-6+1-p$$

$$= 5p-p-6+1$$

$$= 4p-5$$

$$f) -7(4x+3)-10(10x+10)$$

$$= -28x-21-100x-100$$

$$= -28x-100x-100-21$$

$$= -128x-121$$

$$g) 2n(-10n+5)-7(6-10n)$$

$$= -20n^2+10n-42+70n$$

$$= -20n^2+70n+10n-42$$

$$= -20n^2+80n-42$$

$$h) (-a-5)+(2b+2)$$

$$= -a-5-2b+2$$

$$= -a-2b+2-5$$

$$= -a-2b-3$$

$$i) (4p-4)+(-7p-7)$$

$$= 4p-4-7p-7$$

$$= 4p-7p-7-4$$

$$= -3p-11$$

$$j) (-3g)+(5g-5)$$

$$= -3g+5g-5$$

$$= 2g-5$$

$$k) 2a^2+a \div 6a+3$$

$$\frac{2a^2+a}{2b} \cdot \frac{7b^3}{6a+3}$$

$$= \frac{2a^2+a}{2b} \times \frac{7b^3}{6a+3}$$

$$= \frac{2a^2+a(6a+3)}{2b(7b^3)}$$

$$= \frac{2a^2+6a^2+3a}{14b^4}$$

$$= \frac{8a^2+3a}{14b^4}$$

$$\begin{aligned} & \frac{2a^2+a}{2b} \times \frac{7b^3}{6a+3} \\ &= \frac{a(2a+1)}{2b} \times \frac{7b^3}{3(2a+1)} \\ &= \frac{7b^3a}{6b} \\ &= \frac{7b^2a}{6} \end{aligned}$$