# 3.7 – Distributive Property

MPM1D

SOLUTIONS

1. Which expression shows $-3(x + 5)$ expanded?

A) $-3x + 15$
B) $-3x + 5$
C) $-3x - 8$
D) $-3x - 15$

2. Expand using the distributive property

a) $4(x + 2)$

$= 4x + 8$

b) $5(k - 3)$

$= 5k - 15$

c) $-2(y + 1)$

$= -2y - 2$

d) $-8(2 - d)$

$= -16 + 8d$

e) $5(2t - 3)$

$= 10t - 15$

f) $-(4y - 5)$

$= -4y + 5$

3. Expand

a) $y(y - 4)$

$= y^2 - 4y$

b) $r(r + 5)$

$= r^2 + 5r$

c) $x(2x - 5)$

$= 2x^2 - 5x$

d) $q(-4q + 8)$

$= -4q^2 + 8q$

e) $z(-3z + 2)$

$= -3z^2 + 2z$

f) $m(-m - 5)$

$= -m^2 - 5m$

4. Expand

a) $2b(3b - 5)$

$= 6b^2 - 10b$

b) $-4w(3w - 1)$

$= -12w^2 + 4w$

c) $2x(-4x + 3)$

$= -8x^2 + 6x$

d) $(4k + 7)(-3k)$

$= -12k^2 - 21k$

5. Expand using distributive property

a) $(n-5)\times 4$

$=4n-20$

b) $(7m+6)(-4)$

$=-28m-24$

c) $(7+c)(3c)$

$=21c+3c^2$

d) $(4k+7)(-3k)$

$=-12k^2-21k$

6. Expand

a) $2(a^2+5a+3)$

$=2a^2+10a+6$

b) $4x(x^2+x-3)$

$=4x^3+4x^2-12x$

c) $-5y(3y^2-7y-2)$

$=-15y^3+35y^2+10y$

d) $(2y^2+3y-1)(4y)$

$=8y^3+12y^2-4y$

7. Expand and Simplify

a) $3(x+2)+4(x-5)$

$=3x+6+4x-20$

$=7x-14$

b) $-4(y+1)+2(2y-3)$

$=-4y-4+4y-6$

$=-10$

c) $2(u+v)-3(u-v)$

$=2u+2v-3u+3v$

$=-u+5v$

d) $4(w-2)-2(2w+7)$

$=4w-8-4w-14$

$=-22$

8. Expand and Simplify

a) $3[x + 2(x - 4)]$

$= 3(x+2x-8)$

$= 3(3x-8)$

$= 9x - 24$

b) $3[2k - (2 + k)]$

$= 3(2k-2-k)$

$= 3(k-2)$

$= 3k - 6$

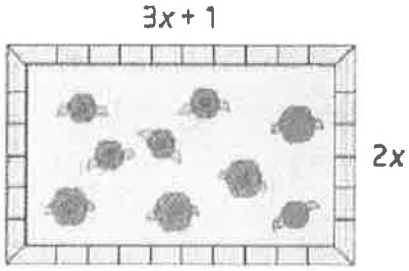
c) $2[-h - 2(h - 1)]$

$= 2(-h-2h+2)$

$= 2(-3h+2)$

$= -6h+4$

9. A garden has dimensions as shown:




a) Write a simplified expression to represent the perimeter.

$P = 2(3x+1) + 2(2x)$

$= 6x + 2 + 4x$

$= 10x + 2$

b) Write a simplified expression for the area.

$A = (2x)(3x+1)$

$= 6x^2 + 2x$

10. Expand and simplify

a) $3(y - 2) - 2(4 - 2y) + (6 - 7y)$

$= 3y - 6 - 8 + 4y + 6 - 7y$

$= -8$

b) $4k(k - 3) - 2(k^2 - 3k + 4) - (k^2 - 5)$

$= 4k^2 - 12k - 2k^2 + 6k - 8 - k^2 + 5$

$= k^2 - 6k - 3$

c) $\frac{1}{3}(3a + 2) + \frac{1}{4}(4a - 2)$

$= a + \frac{2}{3} + a - \frac{1}{2}$

$= 2a + \frac{4}{6} - \frac{3}{6}$

$= 2a + \frac{1}{6}$

d) $\frac{1}{2}(x - 2y) + \frac{1}{3}(3y - 2x)$

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

$= \frac{3x}{6} - \frac{4x}{6}$

$= -\frac{x}{6}$