3.6 – Add and Subtract Polynomials

MPM1D

1. $(2x - 7) + (3x + 8)$ simplified is:

A) $5x - 15$
B) $5x - 1$
C) $5x + 1$
D) $6x - 56$

2. Simplify by removing brackets and collecting like terms

a) $(3x + 4) + (7x + 5)$

$= 3x + 4 + 7x + 5$

$= 10x + 9$

b) $(y + 2) + (3 + 6y)$

$= y + 2 + 3 + 6y$

$= 7y + 5$

c) $(4m - 1) + (3m - 8)$

$= 4m - 1 + 3m - 8$

$= 7m - 9$

d) $(5 - 3d) + (d - 6)$

$= 5 - 3d + d - 6$

$= -2d - 1$

e) $(4k - 3) + (5 + k) + (5k + 3)$

$= 4k - 3 + 5 + k + 5k + 3$

$= 10k + 5$

3. $(3x - 5) - (x - 4)$ simplified is:

A) $2x - 1$
B) $2x + 1$
C) $2x - 9$
D) $2x + 9$

4. Simplify

a) $(2x + 3) - (x + 6)$

$= 2x + 3 - x - 6$

$= x - 3$

b) $(8x + 5) - (x + 5)$

$= 8x + 5 - x - 5$

$= 7x$

c) $(6m + 4) - (2m + 1)$

$= 6m + 4 - 2m - 1$

$= 4m + 3$

d) $(4v - 9) - (8 - 3v)$

$= 4v - 9 - 8 + 3v$

$= 7v - 17$

e) $(9 - 6w) - (-6w - 8)$

$= 9 - 6w + 6w + 8$

$= 17$

f) $(5h + 9) - (-5h + 6)$

$= 5h + 9 + 5h - 6$

$= 10h + 3$

5. Simplify

a) $(7x - 9) + (x - 4)$

$= 7x - 9 + x - 4$

$= 8x - 13$

b) $(8c - 6) - (c + 7)$

$= 8c - 6 - c - 7$

$= 7c - 13$

c) $(3p^2 - 8p + 1) + (9p^2 + 4p - 1)$

$= 3p^2 - 8p + 1 + 9p^2 + 4p - 1$

$= 12p^2 - 4p$

d) $(5xy^2 + 6x - 7y) - (3xy^2 - 6x + 7y)$

$= 5xy^2 + 6x - 7y - 3xy^2 + 6x - 7y$

$= 2xy^2 + 12x - 14y$

e) $(4x-3)+(x+8)-(2x-5)$

$=4x-3+x+8-2x+5$

$=3x+10$

f) $(2uv^2-3v)-(v+3u)+(4uv^2-9u)$

$=2uv^2-3v-v-3u+4uv^2-9u$

$=6uv^2-4v-12u$

6. A women's basketball team gives their players a bonus of $100 on top of their base salary for every 3-point basket. Data for some of the team's players are given.

Player	Base Salary ($1000s)	3-Point Baskets
Gomez	50	25
Henreid	40	20
Jones	100	44

a) Find a simplified expression for the total earnings for these three players.

$E = 50\,000 + 40\,000 + 100\,000 + 100(b)$

$E = 190\,000 + 100(b)$

b) Find the total earnings for these three players.

$E = 190000 + 100(25+20+44)$

$E = 190000 + 100(89)$

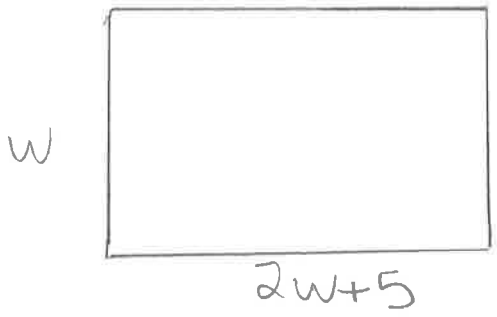
$E = 190000 + 8900$

$E = 198900$

$198 900

7. A swimming pool manufacturer installs rectangular pools whose length is twice the width, plus 5 m.

a) Draw a diagram of the pool and label the length and width using algebraic expressions.



b) Find a simplified algebraic expression that represents the perimeter of the pool.

$P = w + w + 2w + 5 + 2w + 5$

$P = 6w + 10$

c) What is the perimeter if the width of the pool is 6 m?

$P = 6(6) + 10$

$P = 46m$