

6.3 Pascal's Triangle – Worksheet #1

MCR3U

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1) Find each coefficient described.

a) coefficient of x^2 in the expansion of $(2 + x)^5$

b) coefficient of x^2 in the expansion of $(x + 2)^5$

c) coefficient of x in the expansion of $(x + 3)^5$

d) coefficient of b in the expansion of $(3 + b)^4$

e) coefficient of x^3y^2 in expansion of $(x - 3y)^5$

f) coefficient of a^2 in the expansion of $(2a + 1)^5$

2) Find each term described.

a) 2nd term in expansion of $(y - 2x)^4$

b) 4th term in expansion of $(4y + x)^4$

c) 1st term in expansion of $(a + b)^5$

d) 2nd term in expansion of $(y - x)^4$

3) Expand completely

a) $(2m - 1)^4$

b) $(x - y)^3$

c) $(x^4 - y)^5$

d) $(2x^3 + 1)^5$

e) $(y - x^2)^3$

f) $(y^3 - 4x)^3$

Answers

1) a) 80 **b)** 80 **c)** 405 **d)** 108 **e)** 90 **f)** 40

2) a) $-8y^3x$ **b)** $16yx^3$ **c)** a^5 **d)** $-4y^3x$

3) a) $16m^4 - 32m^3 + 24m^2 - 8m + 1$ **b)** $x^3 - 3x^2y + 3xy^2 - y^3$

c) $x^{20} - 5x^{16}y + 10x^{12}y^2 - 10x^8y^3 + 5x^4y^4 - y^5$

d) $32x^{15} + 80x^{12} + 80x^9 + 40x^6 + 10x^3 + 1$

e) $y^3 - 3y^2x^2 + 3yx^4 - x^6$ **f)** $y^9 - 12y^6x + 48y^3x^2 - 64x^3$