Find each coefficient described.

4. Coefficient of y^3 in expansion of $(y + 5)^4$.

$1\ (y)^4\ (5)^0$

$\longrightarrow 4\ (y)^3\ (5)^1 = 4y^3(5) = 20y^3$

$6\ (y)^2\ (5)^2$

$4\ (y)^1\ (5)^3$

$1\ (y)^0\ (5)^4$

$\boxed{20}$

5. Coefficient of m^2 in the expansion of $(2m - 1)^3$.

$1\ (2m)^3\ (-1)^0$

$\longrightarrow 3\ (2m)^2\ (-1)^1 = 3(4m^2)(-1) = -12m^2$

$3\ (2m)^1\ (-1)^2$

$1\ (2m)^0\ (-1)^3$

$\boxed{-12}$

6. Coefficient of x^4 in the expansion of $(4 + 3x)^5$.

$1\ (4)^5\ (3x)^0$

$5\ (4)^4\ (3x)^1$

$10\ (4)^3\ (3x)^2$

$10\ (4)^2\ (3x)^3$

$\longrightarrow 5\ (4)^1\ (3x)^4 = 5(4)(81x^4) = 1620x^4$

$1\ (4)^0\ (3x)^5$

$\boxed{1620}$

Find the term described.

7. 3rd term in expansion of $(2a + 3c)^3$

$1\ (2a)^3\ (3c)^0$

$3\ (2a)^2\ (3c)^1$

$\longrightarrow 3\ (2a)^1\ (3c)^2 = 3(2a)(9c^2) = \boxed{54ac^2}$

$1\ (2a)^0\ (3c)^3$

8. 2nd term in expansion of $(4k - 1)^4$.

$1\ (4k)^4\ (-1)^0$

$\longrightarrow 4\ (4k)^3\ (-1)^1 = 4(64k^3)(-1) = \boxed{-256k^3}$

$6\ (4k)^2\ (-1)^2$

$4\ (4k)^1\ (-1)^3$

$1\ (4k)^0\ (-1)^4$