Name: _____

Multiplying Monomials by Polynomials

A) A rectangle has dimensions of (y + 5) inches and (y - 4) inches.

1) Express the area as a trinomial in terms of y.

2) If y units are removed from the length, express the new area in terms of y.

B) The area of a circle is given by the formula $A = \pi r^2$, where r is the radius of the circle. Suppose a circle has a radius of k - 4 inches.

3) Write an equation to find the area of the circle.

4) Find the area to the nearest hundredth if k = 6.

C) Multiply out the following expressions.

5) 5(2g + 3h)

6) g(3g – 2h)

7) $3k^2$ (2k – 5m + 2n)

8) 3k – (2m + 3n – 5k)

D) Multiply the following together.

9) $(2x)(3y)$

10) $(3x^2)(5xy)$

11) $3(2a + 3b)$

12) $2a(3a + 5b)$

13) $2p(3p^2 + 2pq + q^2)$

14) $2x^2(3x + 2xy + y^2)$

E) Multiply out the following, tidying up the answers as much as possible.

15) $2x - (x - 2y) + 5y$

16) $4(3a - 2b) - 6(2a - b)$

17) $6(2c + d) - 2(3c - d) + 5$

18) $6a - 2(3a - 5b) - (a + 4b)$

19) $3x(2x - 3y + 2z) - 4x(2x + 5y - 3z)$

20) $2xy(3x - 4y) - 5xy(2x - y)$

21) $2a^2(3a - 2ab) - 5ab(2a^2 - 4ab)$

22) $-3p - (p + q) + 2q(p - 3)$

F) Multiply out and collect the like terms together if possible:

23) $3a(2b + 3c) + 2a(b + 5c)$

24) $2xy(3x^2 + 2xy + y^2)$

25) $5p(2p + 3q) + 2q(3p + q)$

26) $2c^2(3c + 2d) + 5d^2(2c + d)$