

Name: _____

Operations with Polynomials

- 1) 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 .
- 2) 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.
 - 1) Write an equation to find the area of the circle.
 - 2) Find the area to the nearest hundredth if $k = 6$.
- 3) Multiply out the following expressions.
 - (1) $5(2g + 3h)$
 - (2) $g(3g - 2h)$
 - (3) $3k^2(2k - 5m + 2n)$
 - (4) $3k - (2m + 3n - 5k)$
- 4) Multiply the following together.
 - (1) $(2x)(3y)$
 - (2) $(3x^2)(5xy)$
 - (3) $3(2a + 3b)$
 - (4) $2a(3a + 5b)$
 - (5) $2p(3p^2 + 2pq + q^2)$
 - (6) $2x^2(3x + 2xy + y^2)$
- 5) Multiply out the following, tidying up the answers as much as possible.
 - (1) $2x - (x - 2y) + 5y$
 - (2) $4(3a - 2b) - 6(2a - b)$
 - (3) $6(2c + d) - 2(3c - d) + 5$
 - (4) $6a - 2(3a - 5b) - (a + 4b)$
 - (5) $3x(2x - 3y + 2z) - 4x(2x + 5y - 3z)$
 - (6) $2xy(3x - 4y) - 5xy(2x - y)$
 - (7) $2a^2(3a - 2ab) - 5ab(2a^2 - 4ab)$
 - (8) $-3p - (p + q) + 2q(p - 3)$
- 6) Multiply out and collect the like terms together if possible:
 - (1) $3a(2b + 3c) + 2a(b + 5c)$
 - (2) $2xy(3x^2 + 2xy + y^2)$
 - (3) $5p(2p + 3q) + 2q(3p + q)$
 - (4) $2c^2(3c + 2d) + 5d^2(2c + d)$