

## Polynomial Worksheets

1. Use the distributive property to write each of the following expressions as the sum of monomials.

a)  $(x^2 - x + 1)(x - 1)$

b)  $3xz(9xy + z) - 2yz(x + y - z)$

c)  $(t - 1)(t + 1)(t^2 + 1)$

d)  $(w + 1)(w^4 - w^3 + w^2 - w + 1)$

e)  $z(2z + 1)(3z - 2)$

f)  $(x + y)(y + z)(z + x)$

g)  $\frac{x + y}{3}$

h)  $(20f^{10} - 10f^5) \div 5$

i)  $-5y(y^2 + y - 2) - 2(2 - y^3)$

j)  $(-2f^3 - 2f + 1)(f^2 - f + 2)$

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a)  $(x^2 - x + 1)(x - 1)$

$$x^3 - 2x^2 + 2x - 1$$

b)  $3xz(9xy + z) - 2yz(x + y - z)$

$$27x^2yz + 3xz^2 - 2xyz - 2y^2z + 2yz^2$$

c)  $(t - 1)(t + 1)(t^2 + 1)$

$$t^4 - 1$$

d)  $(w + 1)(w^4 - w^3 + w^2 - w + 1)$

$$w^5 + 1$$

e)  $z(2z + 1)(3z - 2)$

$$6z^3 - z^2 - 2z$$

f)  $(x + y)(y + z)(z + x)$

$$2xyz + x^2y + x^2z + xy^2 + xz^2 + y^2z + yz^2$$

g)  $\frac{x + y}{3}$

$$\frac{1}{3}x + \frac{1}{3}y$$

h)  $(20f^{10} - 10f^5) \div 5$

$$4f^{10} - 2f^5$$

i)  $-5y(y^2 + y - 2) - 2(2 - y^3)$

$$-3y^3 - 5y^2 + 10y - 4$$

j)  $(-2f^3 - 2f + 1)(f^2 - f + 2)$

$$-2f^5 + 2f^4 - 6f^3 + 3f^2 - 5f + 2$$