

Instructions: Show all work. Give exam answers.

1. Factor by finding the GCF.

a. $x^3 + 5x^2$

$$x^2(x+5)$$

b. $x^9y^6 + x^3y^5 - x^4y^3 + x^3y^3$

$$x^3y^3(x^6y^3 + y^2 - x + 1)$$

2. Factor by grouping.

a. $6x - 42 + xy - 7y$

$$6(x-7) + y(x-7)$$

$$(6+y)(x-7)$$

b. $5q^2 - 4pq - 5q + 4p$

$$q(5q-4p) - 1(5q-4p)$$

$$(5q-4p)(q-1)$$

3. Factor completely.

a. $x^2 - 3x - 18$

$$(x-6)(x+3)$$

b. $x^2 + 19x + 60$

$$(x+15)(x+4)$$

c. $x^3 - 2x^2 - 24x$

$$x(x^2 - 2x - 24)$$

$$x(x-6)(x+4)$$