

Algebra II
Factoring worksheet
GCF, $a > 1$, perfect cubes, 2-step

Name _____

Below is an example of each type of factoring to look for in the problems on this worksheet:

GCF

Look for a factor
or variable common
to each part.

$$3x^3y - 18x^2y^2$$

factor out the GCF
 $= 3x^2y(x - 6y)$

$a > 1$

Look for a number
other than 1 as the
leading coefficient

$$4x^2 - 3x - 10$$

try different combo.s
 $= (4x + 5)(x - 2)$

perfect cubes

Look for two terms
and a variable raised
to the power of 3, 6, 9...

$$y^3 + 27z^3$$

little (), big (), SOAP
 $(y + 3z)(y^2 - 3yz + 9z^2)$

2-step

Look for a GCF
first, then attempt
to factor again

$$2n^3 + 18n^2 + 40n$$
$$= 2n(n^2 + 9n + 20)$$
$$= 2n(n + 5)(n + 4)$$

1) $8m + 36m^3 - 20m^4$

2) $3x^2 - 6x - 24$

3) $m^3 - 64$

4) $9a^2 + 33a + 28$

5) $10r + 55w + 5 - 30v$

6) $4n^2 - 100$

7) $14p^2q^5 - 49p^3q^2$

8) $18x^2 + 19x - 12$

9) $ry^2 + 6ryz + 9rz^2$

10) $8d^3 + 27$

11) $10b^6 - 3b^2 - 7b$

12) $6y^2 - 13y + 7$

13) $12mn + 6m - 9m^2$

14) $81b^4 - 4$

15) $4c^4 - 4c$