



6.1 Greatest Common Factors and Factoring by Grouping

Written by: Cindy Alder

Objectives

- Factor out the greatest common factor.
- Factor by grouping.

Foldable

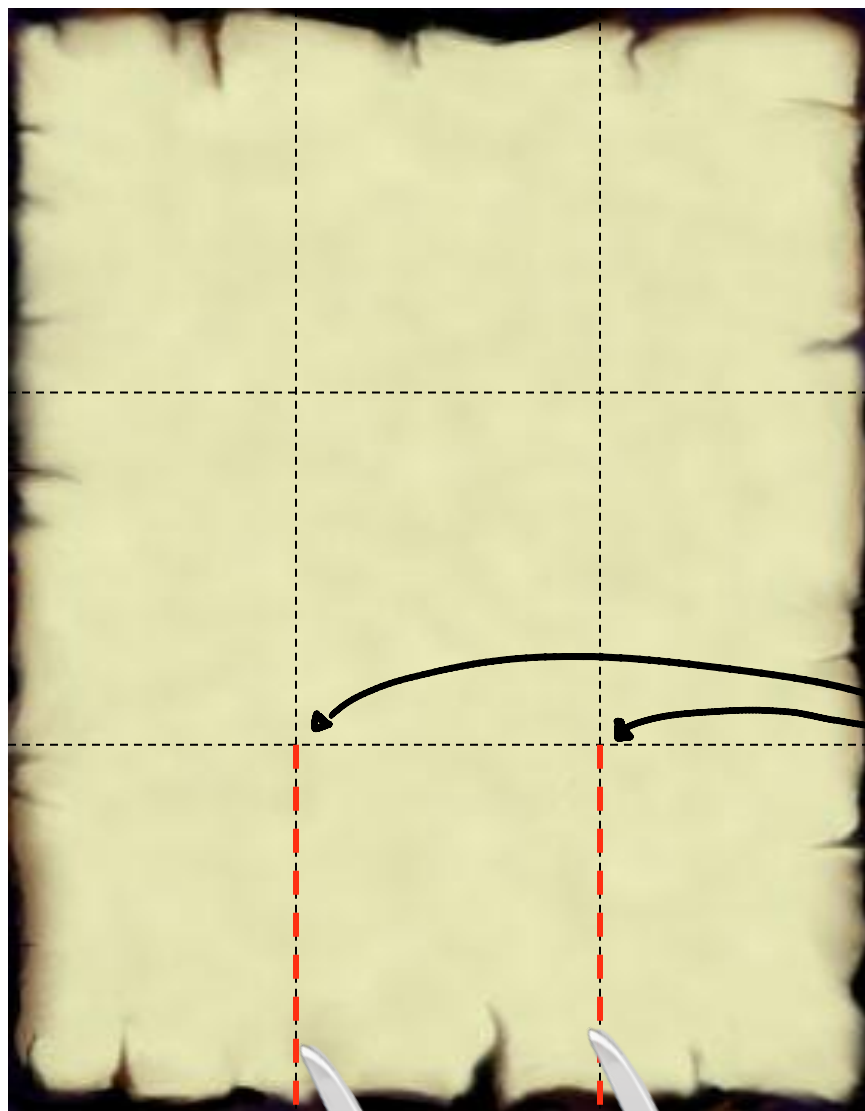


Fold paper
into
thirds.

Foldable



* With paper folded - fold into thirds again.



Unfold your
paper and
cut slits in
bottom across
the fold.

STOP HERE!

*Fold paper back into thirds. The cut part should be tucked inside.



Factor out the Greatest Common Factor

- $7k + 28$

- $32m + 24$

- $8a - 9$

- $5z + 5$

Factor out the Greatest Common Factor

- $100m^5 - 50m^4 + 25m^3$

- $5m^4x^3 + 15m^5x^6 - 20m^4x^6$

Factoring Polynomials !!

Is there a Greatest Common Factor?
(GCF)

Factor out a Binomial Factor

- $6(p + q) - r(p + q)$
- $(a + 2)(a - 3) + (a + 2)(z + 6)$

Factor out a Binomial Factor

- $(y - 1)(y + 3) - (y - 1)(y + 4)$

Factor out a Binomial Factor

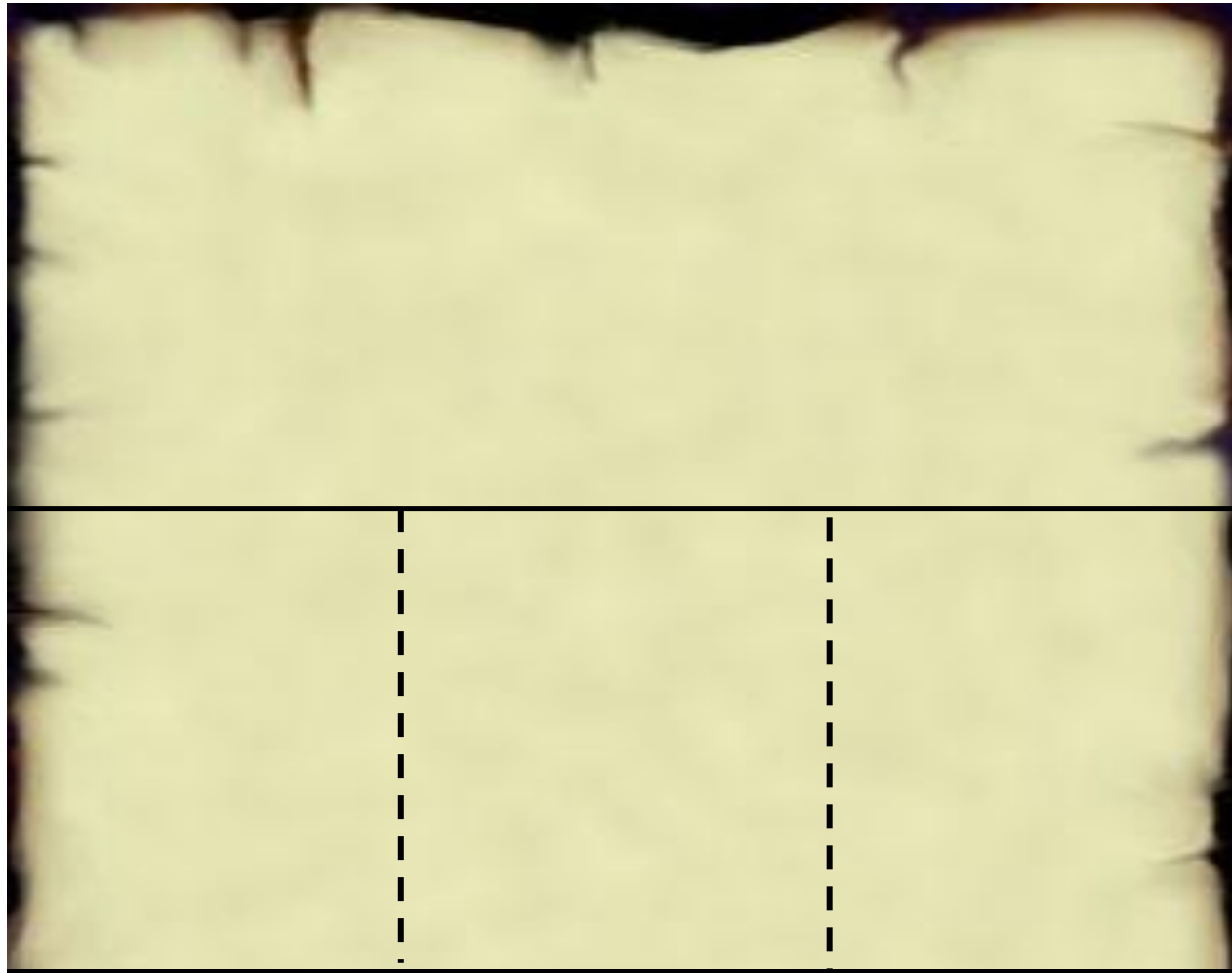
- $k^2(a + 5b) + m^2(a + 5b)^2$

Factor out a Negative Common Factor

- $-6x^2 + 5x$

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

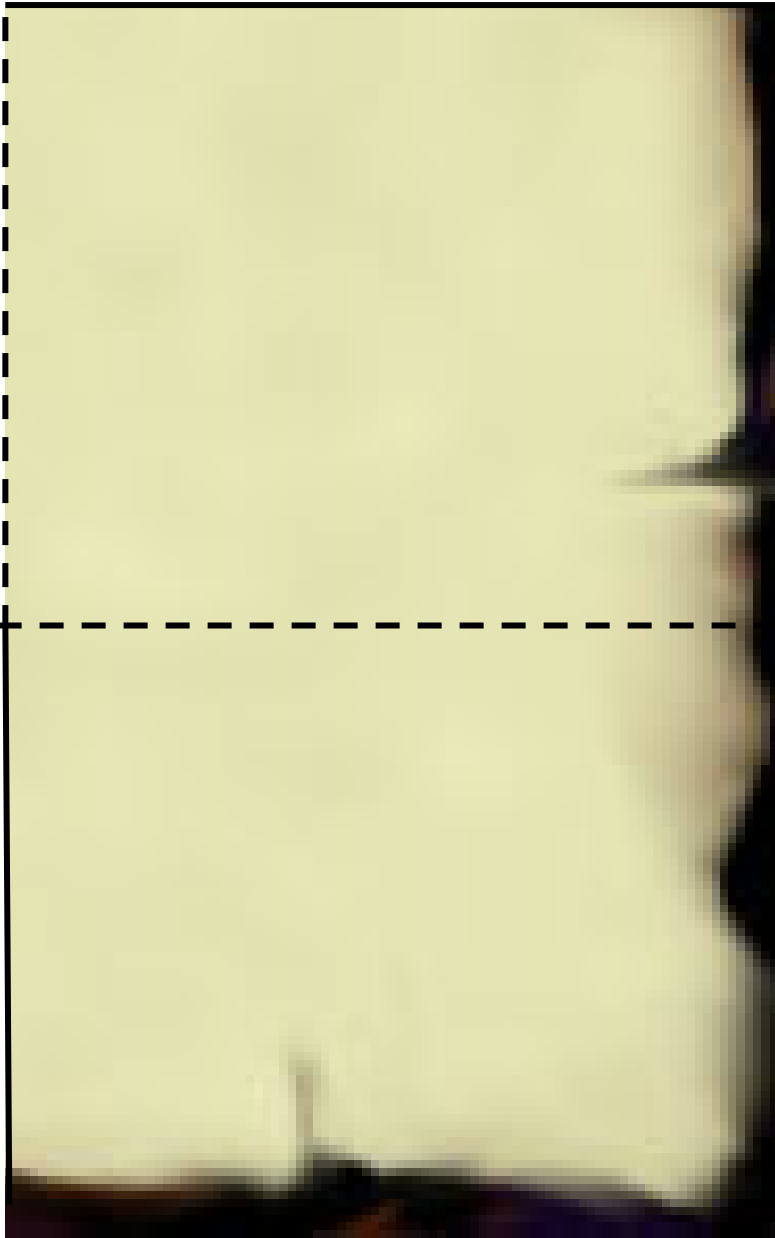
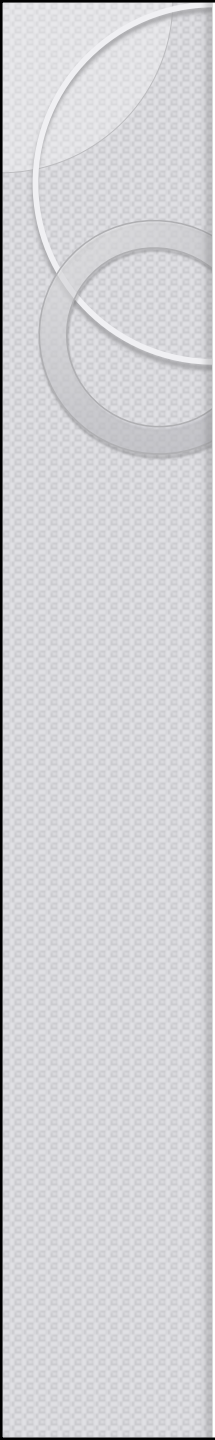
Foldable



How many terms are remaining?

Two
Terms

Three
Terms



4 or More Terms – Factor by Grouping

- $6p - 6q + rp - rq$

- $3xy^2 - 6y^2 - 12xy + 24y$

4 or More Terms – Factor by Grouping

- $kn + mn - k - m$

- $8x^2y + 12xy + 8x^2 + 12x$

Factor by Grouping

ex $2x^2 - 4x + 3xy - 6y$
 $(2x^2 - 4x) + (3xy - 6y)$

$$2x(x-2) + 3y(x-2)$$

$$(x-2)(2x+3y)$$

4 or More Terms – Factor by Grouping

- $6y^2 - 20w + 15y - 8yw$

4 or More Terms – Factor by Grouping

- $2a^2 - 4 + a^2b + 3b$

4 or More Terms – Factor by Grouping

- $4 - 18y + 9xy - 2x$