

2/6 Algebra 1 - Downing (Factor by Grouping)

#21) ① $C=32$ $B=18$

$2 + 16$

② $C=32$ $B=-33$

$-32 + -1$

③ $C=-32$ $B=4$

$8 + -4$

④ $C=-32$ $B=14$

$16 + -2$

* $\boxed{32}$

1	32
2	16
4	8

3) $-60k^2 - 6$
 $6(-10k^2 - 1)$

* $\boxed{-60}$

60	1
10	-6

* $\boxed{-6}$

6	1
3	-2

* DON'T FORGET TO FACTOR

Unit 6 Lesson 5

To factor a polynomial with four terms, group the terms into pairs. Factor the GCF out of each pair of terms. Look and factor out the common binomial factor. This process is called Factoring by Grouping.

Example: $(32k^3 + 20k^2)(-56k - 35)^*$

① GCF of $32 + 20$? $4k^2$

② GCF of $-56 + -35$? -7

$\frac{4k^2(8k+5)}{(4k-7)(8k+5)}$

simplify?

$(4k^2 - 7)(8k + 5)$

Example: $(b^3 + 7b^2)(-b - 7)$

$b^2(b+7) - 1(b+7)$

$(b^2 - 1)(b + 7)$

* IF first term in pair is Negative, factor out negative.

Example: $(16x^3 - 56x^2) \div (-6x + 21)$

$$\frac{8x^2(2x - 7)}{-3(2x - 7)}$$

The diagram shows the expression $\frac{8x^2(2x - 7)}{-3(2x - 7)}$ with arrows indicating the cancellation of the common factor $(2x - 7)$ from both the numerator and the denominator. The result is $(8x^2 - 3)$.

$$(8x^2 - 3)(2x - 7)$$

* just in case: make sure you use your GCF columns. It will help when they throw a negative into the equation.