

Alg. I BE Thursday 1-14-10

If the binomial product is ONE OF THE 3 special cases, use the "pattern" for it and mental math. Otherwise, use the D.P. w/arrows (i.e., "FOIL")

① $(x+7)^2$

② $(3x-4)(3x-4)$

③ $(2x-y)(2x+y)$

④ $(5x-2)(5x-3)$

⑤ Use a prime factorization to find all the factors of 128.

• Homework review: Pg 461 # 5-10
Pg 477 # 1, 4-9.

Prime Factorization of A Negative

Integer: Ex 3 Pg 475

$$-140 \Rightarrow 140$$

$$\begin{array}{cc} 10 & 14 \\ \swarrow \searrow & \swarrow \searrow \\ (2) & (5) & (2) & (7) \end{array}$$

$$-140 \Rightarrow \boxed{-1 \cdot 2 \cdot 2 \cdot 5 \cdot 7}$$

just $\uparrow$ add -1 to the P.F. of 140

Prime Factorization of A Monomial

Ex 4 Pg 476 (A) $12a^2b^3$

$$\Rightarrow \boxed{2 \cdot 2 \cdot 3 \cdot a \cdot a \cdot b \cdot b \cdot b}$$

$$\begin{array}{cc} 12 & \\ \swarrow \searrow & \\ (3) & 4 \\ & \swarrow \searrow \\ & (2) & (2) \end{array}$$

(B) $-66pg^2$

$$\boxed{-1 \cdot 2 \cdot 3 \cdot 11 \cdot p \cdot g \cdot g}$$

$$\begin{array}{cc} 66 & \\ \swarrow \searrow & \\ (11) & 6 \\ & \swarrow \searrow \\ & (2) & (3) \end{array}$$

GCF Greatest Common Factor

(EX) GCF of 8, 12 is 4

Since: factors of 8 $\Rightarrow$ 1, 2, 4, 8

factor of 12 $\Rightarrow$ 1, 2, 3, 4, 6, 12

4 is the greatest common factor.

1, 2, and 4 are common factors of 8, 12.

(EX) Using A Prime Factorization to Find the GCF of two or more integers $\Rightarrow$ MULTIPLY THE SHARED PRIME (COMMON FACTORS)

(EX) 16 and 24

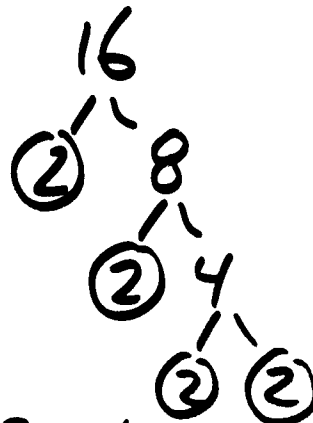
$$\begin{array}{c}
 16 \\
 \swarrow \searrow \\
 4 \quad 4 \\
 \swarrow \searrow \quad \swarrow \searrow \\
 (2) (2) (2) (2) \\
 \hline
 2 \cdot 2 \cdot 2 \cdot 2 \\
 \underline{\quad \quad \quad}
 \end{array}
 \quad
 \begin{array}{c}
 24 \\
 \swarrow \searrow \\
 (3) \quad 8 \\
 \quad \swarrow \searrow \\
 \quad (2) \quad 4 \\
 \quad \quad \swarrow \searrow \\
 \quad \quad (2) (2) \\
 \hline
 2 \cdot 2 \cdot 2 \cdot 3 \\
 \underline{\quad \quad \quad}
 \end{array}$$

SHARE $2 \cdot 2 \cdot 2 = \boxed{8 = \text{GCF}}$

If the GCF of a set of integers is 1, then the integers are called "RELATIVELY prime"

Ex 5A
Pg 476

Find GCF of 15 and 16



No GCF > 1 , so 15 and 16 are "RELATIVELY prime" $\Rightarrow$ they are NOT primes, but ARE prime when the factors are compared to each other.

(Ex) What is the GCF of x^2 and x^5

$$\begin{array}{l}
 x^2 \Rightarrow (x \cdot x) \\
 x^5 \Rightarrow (x \cdot x) \cdot x \cdot x \cdot x
 \end{array}$$

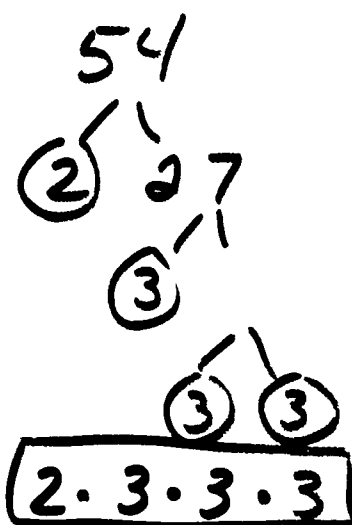
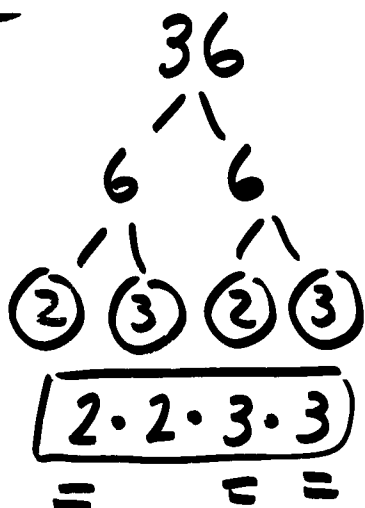
x^2 is GCF

Putting the GCF of numbers and variables together to find the GCF of monomials:

(EX) GCF of $4x^2$ and $10x^5$

GCF is $\boxed{2x^2}$

Ex 5b GCF of $36x^2y$ and $54xy^2z$
Pg 476



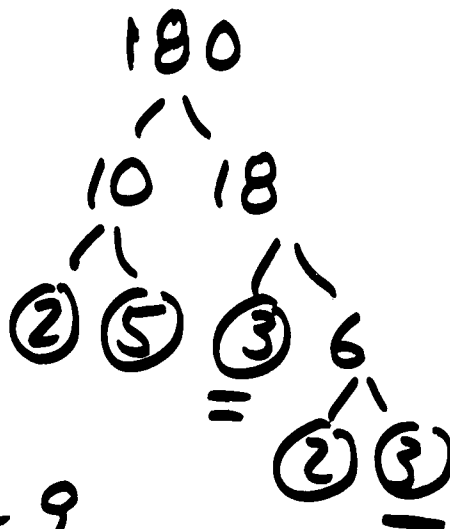
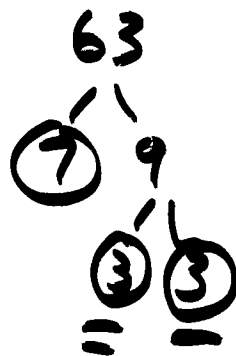
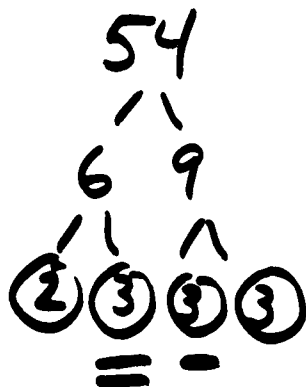
$$GCF = 2 \cdot 3 \cdot 3 = 18$$

$$\therefore GCF = \boxed{18xy}$$

(Ex)

Find THE GCF OF

$$54x^2y^3, 63xy^2, 180xy$$



$$GCF \Rightarrow 3 \cdot 3 = 9$$

$$\therefore GCF \Rightarrow \boxed{9xy}$$

Homework/Classwork:

Pg 478 # 40-42
48-61