

Factors and Divisibility (Part 1 – Required for Honors)

First & Last Name: _____ Class: _____

If you did not get full points on the *Factors and Divisibility* section of the “Pre-Review” test, attempt all of the questions on this handout. Check your answers using the answer key. If you did not get a correct answer, use Khan Academy to review and master the topic.

Honor Students: you are expected to master all the questions.

Section 1: Factors and divisibility (KA link)

- Which monomials are divisible by $-8p^2q$ (choose all answers that apply)?
 - $16p^2q$
 - $72p^4q^2$
 - None of the above
- Which monomials are factors of $-120a^8b$ (choose all answers that apply)?
 - $-50a^2$
 - $-4a^5$
 - None of the above
- A teacher writes the following product on the board:
 $(k^2 - 4)(k^2 - 5) = k^4 - 9k^2 + 20$
 Karim says that $k^4 - 9k^2 + 20$ is a factor of $k^2 - 4$.
 Marci says that $k^2 - 4$ is divisible by $k^4 - 9k^2 + 20$. Who is correct?
 - Only Karim
 - Only Marci
 - Both Karim and Marci
 - Neither Karim nor Marci

Section 2: Factor monomials (KA link)

- Find the missing factor F that makes the equality true.

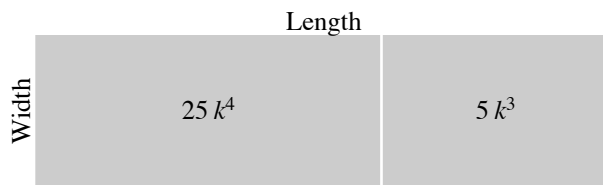
$$-36b^6 = (F)(9b^5)$$
- A rectangle has an area of $80p^5$ square meters and a length of $20p$ meters. What is the width of the rectangle?
- Zach factored $63y^8$ as $(9y^4)(7y^4)$
 Isabella factored $63y^8$ as $(3y)(21y^7)$
 Which of them factored $63y^8$ correctly?
 - Only Zach
 - Only Isabella
 - Both Zach and Isabella
 - Neither Zach nor Isabella

Section 3: Greatest common factor of monomials (KA link)

- What is the greatest common factor of $24x^2$, $12x^2$ and $8x$?
- What is the greatest common factor of $32p^2q^4$ and $20pq^3$?
- What is the greatest common factor of $11ab$ and $9a^3$?

Section 4: Factor polynomials: common factor (KA link)

1. Factor $x(x - 4) - 6(x - 4)$ as the product of two binomials.
2. Factor $33r^6 - 22r^5 + 88r^3$ by its greatest common monomial factor.
3. The rectangle below has an area of $25k^4 + 5k^3$ square meters. The width of the rectangle (in meters) is equal to the greatest monomial factor of $25k^4$ and $5k^3$. What is the length and width of the rectangle?



Section 5: Evaluate expressions using structure (KA link)

1. If $x + 3y + 8z = -12$, what is $24z + 3x + 9y$?
2. If $x + y + z = 6$ and $a + b = 5$, what is $-8b - 3z - 3y - 8a - 3x$?

Section 6: Warmup: factoring quadratics intro (KA link)

1. Factor $x^2 + 8x + 15$ as the product of two binomials.
2. Factor $p^2 - 12p + 32$ as the product of two binomials.
3. Factor $r^2 - 3r - 18$ as the product of two binomials.

Section 7: Factoring quadratics intro (KA link)

1. Factor $x^2 - 10x + 21$ as the product of two binomials.
2. The rectangle below has an area of $x^2 + 11x + 28$ square meters and a length of $x + 7$ meters. What expression represents the width of the rectangle?

