Math 10 Foundations LG 4/5 Quiz Ver. B Answer Sheet

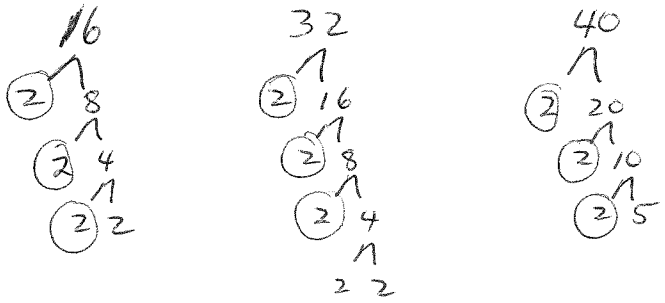
Instructions

1. **Mark your quiz.**
2. **Complete the "How Did I Do?" sheet.**
3. **Return this sheet to Mrs. Craig.**
4. **Bring your marked quiz and the "How Did I Do?" page to your teacher for a quick interview.**

Foundations of Math 10 LG 4/5 Ver B /20

Expectation #1: Determine prime factors, greatest common factors, and least common multiples of whole numbers.

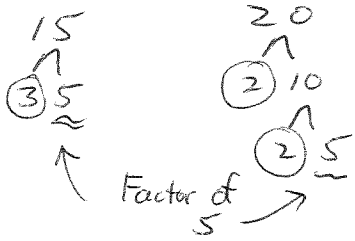
1. Determine the Greatest Common Factor (GCF) of the following: 16, 32, 40. (1 mark)



GCF: $2 \times 2 \times 2 = 8$

1

2. Identify the Least Common Multiple (LCM) of the following: 15 and 20 (1 mark)



LCM: $2 \times 2 \times 3 \times 5 = 60$

1

Expectation #2: Determine the common factor of polynomials.

3. Factor completely. (2 marks each)

a) $3x - 6$

$3(x-2)$

b) $22xy^2 - 33x^3y^2$

$11xy^2(2-3x^2)$

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Expectation #3: Factor trinomials.

4. Determine two values of b that allow the expression to be factored (2 marks)

$$x^2 + bx + 10$$

Positive Factors of 10

$1 \times 10 = 10$
$2 \times 5 = 10$

Negative Factors of 10

$-1 \times -10 = 10$
$-2 \times -5 = 10$

Possible Values of b:

$1 + 10 = 11$
$2 + 5 = 7$

Negative Values of b:

$-1 + (-10) = -11$
$-2 + (-5) = -7$

5. Factor completely. (2 marks each)

b) $x^2 + 10x + 25$

$(x+5)(x+5)$
OR $(x+5)^2$

b) $x^2 + xy - 30y^2$

$(x-5y)(x+6y)$

THINK
$2 \times 3 = 6$
$6 + 1 = 7$
$6 \times 1 = 6$

c) $2x^2 + 7x + 3$

$2x^2 + 6x + x + 3$
GCF GCF
$2x(x+3) + 1(x+3)$
$(2x+1)(x+3)$

d) $20x^2 - 22x + 6$

Find GCF: 2?

$2(10x^2 - 11x + 3)$
$2[10x^2 - 6x - 5x + 3]$
GCF GCF
$2[2x(5x-3) - 1(5x-3)]$
$2[(2x-1)(5x-3)]$
$2(2x-1)(5x-3)$

THINK
$10 \times 3 = 30$
$-6 + -5 = -11$
$-6 \times -5 = 30$

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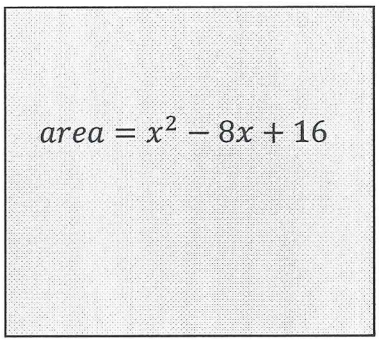
6. A square has an area of $x^2 - 8x + 16$. Determine the dimensions of the square and then calculate the length and width of the square if $x = 9cm$. (2 marks)



Factor: $x^2 - 8x + 16$

$(x-4)(x-4)$

IF $x = 9$: $(9-4)(9-4)$

$(5)(5)$

So, Length = 5cm and width = 5cm

OR: $9^2 - 8(9) + 16$

$= 81 - 72 + 16$

$= 9 + 16 = 25 \rightarrow \sqrt{25} = 5$ cm each side

Expectation #4: Factor a difference of squares (special trinomial).

7. Give an example of a perfect square trinomial and the factor the expression (2 marks)

$(x+2)^2 = (x+2)(x+2) = x^2 + 4x + 4$

OR $(x+5)^2 = (x+5)(x+5) = x^2 + 10x + 25$

OR $x^2 + 6x + 9 = (x+3)(x+3) = (x+3)^2$

etc.

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