

MTH 28.5, Fall 2024

Take home exam

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Directions:

Due: Monday, October 7.

Directions: Write your answers in your own paper and give them to me at the beginning of class. To get full credit you must **show your work**. Make sure to clearly write your name in every page of your submission and to clearly indicate your answers. Please, **STAPLE ALL THE SHEETS OF YOUR SUBMISSION TOGETHER**.

NO LATE SUBMISSIONS WILL BE ACCEPTED.

1. Simplify:

(a) $(-3x^2 + 3x + 1) - (-2x^2 + 3x - 5)$.

(b) $-3(x - 2) + 2(3x - 4)$.

(c) $-2(x^2 - 3x + 1) + 2(x^2 + 3)$.

2. Perform the operations:

(a) $(x - 3)(x + 8)$.

(b) $(2x - 3)^2$.

(c) $(2x - 3)(2x + 3)$.

(d) $(x + 2)(x^2 - 2x + 4)$.

(e) $(x^2 + 3x)(x^2 + 9) - (3x - 9)(x^2 + 9)$.

3. Solve the following equations:

(a) $2x + 3 = 21$.

(b) $2(x + 3) = 5 + x$.

(c) $3(2x - 1) - 2x + 1 = 10 - 2(5 - x)$.

(d) $x + 2 = -4x + \frac{1}{2}$.

(e) $8 - \frac{x}{4} = \frac{4x}{3} - \frac{3}{2}$.