

5 Quiz 5 MAT 1275 Professor Chiu

Name: _____

- This quiz consists of 2 questions, each worth 5 points, for a total of 10 points.
- You have 10 minutes to complete the quiz.
- Show all work and justify your answers.
- Scientific calculators are allowed.
- Wishing you success.

1. Multiply and simplify:

Sol.

$x^2 - 2x + 3$							
$-2x$	<table style="border-collapse: collapse;"> <tr> <td style="border: 1px solid black; padding: 5px;">$-2x^3$</td> <td style="border: 1px solid black; padding: 5px;">$4x^2$</td> <td style="border: 1px solid black; padding: 5px;">$-6x$</td> </tr> <tr> <td style="border: 1px solid black; padding: 5px;">-1</td> <td style="border: 1px solid black; padding: 5px;">$-x^2$</td> <td style="border: 1px solid black; padding: 5px;">$2x - 3$</td> </tr> </table>	$-2x^3$	$4x^2$	$-6x$	-1	$-x^2$	$2x - 3$
$-2x^3$	$4x^2$	$-6x$					
-1	$-x^2$	$2x - 3$					

$$(x^2 - 2x + 3)(-2x - 1) = -2x^3 + 4x^2 - x^2 - 6x + 2x - 3$$

$$= -2x^3 + 3x^2 - 4x - 3$$

$(-2x) \cdot x^2 = -2x^3$
 $(-2x) \cdot (-2x) = 4x^2$
 $(-2x) \cdot 3 = -6x$
 $(-1) \cdot x^2 = -x^2$
 $(-1) \cdot (-2x) = 2x$
 $(-1) \cdot 3 = -3$

2. Divide $8x^2y^3 + 12x^3y - 4xy$ by $4xy$.

Sol

$$\frac{8x^2y^3 + 12x^3y - 4xy}{4xy} = \frac{8x^2y^3}{4xy} + \frac{12x^3y}{4xy} - \frac{4xy}{4xy}$$

$$= \left(\frac{8}{4}\right) \cdot \left(\frac{x^2}{x}\right) \cdot \left(\frac{y^3}{y}\right) + \left(\frac{12}{4}\right) \cdot \left(\frac{x^3}{x}\right) \cdot \left(\frac{y}{y}\right) - \left(\frac{4}{4}\right) \cdot \left(\frac{x}{x}\right) \cdot \left(\frac{y}{y}\right)$$

$$= 2 \cdot x \cdot y^2 + 3 \cdot x^2 \cdot 1 - 1$$

$$= \underline{2xy^2 + 3x^2 - 1}$$