

MATHEMATICS II

DIAGNOSTIC EXAM

Name: _____ Group: _____

Instructions: Solve correctly the following problems. Cell phones and calculators are not allowed.

Write your procedure and operations. Answers without procedure are not valid (zero points).

Solve the following operations. Identify the order of operations.

1. $2(7(6 + 3)) - 5(2 - 3)(9 - 7)$

3. $[(40 \div 10) - 5] + [(\sqrt{36})(1^2)(3)]$

2. $-3\left\{2\frac{3}{4} + \frac{4}{5} - \left[-\frac{4}{7}\left(\frac{1}{5} + 3\right)\right]\right\}$

4. $\frac{2^3 - 5(4 - 2)}{4 + (5 - 7)^3} + 5^{-2}(3 + 6)$

Solve the following operations, simplifying similar terms when needed

5. $(2x + 7)(x - 3)$

6. $\frac{x^5 y^8 z^2}{x^4 y^7 z}$

7. $\left(x - \frac{5}{2}\right)^2$

Solve the following equations:

8. $\frac{3}{5}x + \frac{7}{2} = 3$

9. $x^2 - 2x - 15 = 0$

10. Calculate the perimeter and area of the following figure. Consider $\pi = 3.14$.

