

Foundations for College Algebra
University of North Georgia
Fall 2015
Quiz #7

Name: Key Date: October 7, 2015

Show all work!

1. Determine if the following Relation is a function (explain your answer) and state the Domain and Range: $R = \{(-2, 6), (3, 4), (-8, 3), (4, 3), (3, -5), (2, -2)\}$

It is not a function because of
of $(3, 4)$ and $(3, -5)$

Domain: $\{-2, 3, -8, 4, 2\}$

Range: $\{6, 4, 3, -5, -2\}$

2. Given $f(x) = -3x^2 + 2x - 5$; evaluate $f(-5)$

$$\begin{aligned} f(-5) &= -3(-5)^2 + 2(-5) - 5 \\ &= -3(25) - 10 - 5 \\ &= -75 - 10 - 5 \\ &= -90 \end{aligned}$$

3. State the coefficient and the degree of the following term: $-7a^3b^5c$

-7 Degree: $3 + 5 + 1 = 9$

4. Simplify the given polynomial by combining like terms and arrange your answer in descending powers of x : $-4x^2 - 6x + 3 - 3x^2 + 3x - 6$

$$\begin{aligned} &-4x^2 - 3x^2 - 6x + 3x + 3 - 6 \\ &-7x^2 - 3x - 3 \end{aligned}$$

5. State the degree of the following polynomial: $3x^{15} + 4 + 8x^3 - 8x^{19}$

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6. Given $g(x) = \frac{\frac{3}{2x} + \frac{4}{x}}{\frac{-8}{5x}}$; evaluate $g(-4)$

$$g(-4) = \frac{\frac{3}{2(-4)} + \frac{4}{(-4)}}{\frac{-8}{5(-4)}}$$

$$= \frac{\frac{-3}{-8} + \frac{4}{-4}}{\frac{-8}{-20}} = \frac{\frac{-3 + (-8)}{8}}{\frac{2}{5}}$$

$$= \frac{-\frac{11}{8} \cdot 5}{\frac{2}{5}}$$

$$= -\frac{11}{8} \cdot \frac{5}{2}$$

$$= -\frac{55}{16}$$