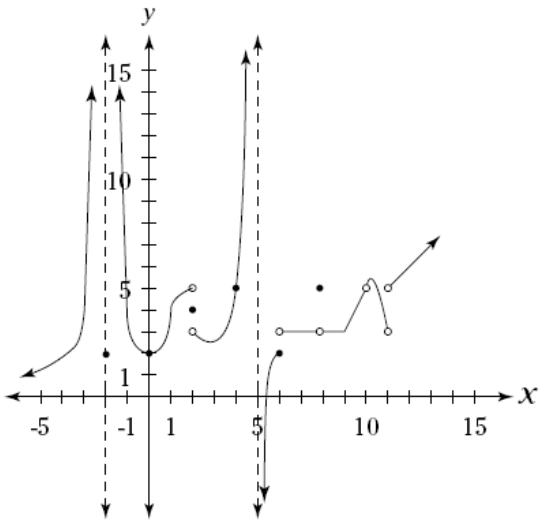
Name_____ Date_____ Period_____

PCPAP TEST: Chapter 1.1-2.2 2017
No Calculator A

Part I: Multiple Choice. Put the CAPITAL letter in each blank to the left of the problem number.

The graph of $g(x)$ is give at right. Use the graph to answer questions 1-4.



_____ 1. $\lim_{x\to 11^-} g(x) =$ (A) 2 (B) 3 (C) 4 (D) 5 (E) DNE

_____ 2. $\lim_{x\to 0^+} g(x) =$ (A) 2 (B) 3 (C) 4 (D) 6 (E) DNE

_____ 3. $\lim_{x\to 6} g(x) =$ (A) 2 (B) 3 (C) 4 (D) 5 (E) DNE

_____ 4. $g(2) =$ (A) 3 (B) 4 (C) 5 (D) 6 (E) DNE

_____ 5. The function $f(x)=\dfrac{x^2+6x-16}{x^2-9x+14}$ has a removable point discontinuity at

(A) $(2,2)$ (B) $(7,15)$ (C) $(2,-2)$ (D) $(7,-5)$ (E) $(8,-7)$

_____ 6. Simplify: $\dfrac{5x^{-2}y^2+7x^2y^{-3}}{x^{-2}y^{-1}+3x}$

(A) $\dfrac{5x^4+7y^5}{x^3y+3x^3y^2}$ (B) $\dfrac{5x^4\sqrt{y}+7\sqrt{x}y^4}{1+3y}$ (C) $\dfrac{5x^4y+7xy^4}{1+3x^3y}$ (D) $\dfrac{5x^2y^2+7x^2y^3}{x^2y+3x}$ (E) $\dfrac{5y^5+7x^4}{y^2+3x^3y^3}$

_____ 7. If $f(x)=\begin{cases} x^2+1, & x\le -2 \\ -3x-1, & -2<x\le 2 \\ \dfrac{8}{x}, & x>2 \end{cases}$

Which of the following is NOT true regarding *f(x)* ?

(A) The domain of g is the set of all real numbers (B) The $\lim_{x\to 2^-} f(x)=-7$

(C) The $\lim_{x\to 2^+} f(x)=4$ (D) There is a vertical asymptote at x = 0 (E) There is a jump at x = 2

_____ 8. Find the domain of $h(x)=\dfrac{\sqrt{x+9}}{\sqrt{x}-1}$. D_h :

(A) $\{x|x\neq 0,1\}$ (B) $\{x|x\ge -9, x\neq 1\}$ (C) $\{x|x\ge 0, x\neq 1\}$ (D) $\{x|x\ge 0\}$ (E) $\{x|x\ge -9, x\neq 0\}$

_____ 9. . The domain of the complex fraction $B(x)=\dfrac{\dfrac{5}{2x}+\dfrac{x+3}{x+5}}{\dfrac{x-5}{x+5}}$ is D_B :

(A) $\{x|x\neq -5,0,5\}$ (B) $\{x|x\neq 0,5\}$ (C) $\{x|x\neq 0,-5\}$ (D) $\{x|x\neq 0\}$ (E) $\{x|x\neq -5\}$

Part II: Free Response

Show all work in a logical, vertical sequence and use proper notation. Your bottom line in each problem will be your answer. Work each problem in the space provided.

10. For the following functions,
$f(x) = -3\sqrt{-6-2x} + 17$, $g(x) = \sqrt{x+16}$, $h(x) = x^2 + 4x - 21$ answer the following questions.

(a) Set up and simplify the **equation** for the function $P(x) = g(h(x))$, and then find the domain. Show the work that leads to your answer. Give your domain in either proper set or interval notation.

(b) Set up the **equation** for the function $R(x) = \dfrac{2x-8}{g(x)}$, and then find the domain of $R(x)$. Show the work that leads to your answer. Give your domain in either proper set or interval notation.

(c) Set up the **equation** for the function $J(x)=\frac{f(x)}{h(x)}$, and then find the domain of $J(x)$. Show the work that leads to your answer. Give your domain in either proper set or interval notation. . DO NOT DOUBLY EXCLUDE ANY VALUES!!!

(d) Set up and **completely simplify** $\frac{h(x+p)-h(x)}{p}$ for some constant *p*. Show the work that leads to your answer.