

NOTICE: This Material May Be Protected
By Copyright Law (Title 17, U.S. Code)

JOHNSON

221 EXAM I - FEBRUARY 21, 2005

NAME: _____

T. A.: _____

INSTRUCTIONS: Show all your work. Answers alone will receive little or no credit. Read the instructions carefully and do what is asked. If you do not understand what is being asked, raise your hand and someone will assist you. Calculators and one 8.5" by 11" sheet of paper are permitted.

1. _____

2. _____

3. _____

4. _____

5. _____

6. _____

TOTAL _____

1. (15 p'ts.) Find the distance from $(\frac{3}{2}, \frac{7}{2})$ to the line : $3x + 4y = 6$.

Ans. _____

2. (10 p'ts.) Let $g(x) = x^3 - 2$. Find $g^3(1)$ and $(g \circ g \circ g)(1)$.

Ans. $g^3(1) =$ _____ $(g \circ g \circ g)(1) =$ _____

3. (15 p'ts.) Find the exact value of $\sin(5\pi/12)$.
Hint: You might want to write $5\pi/12 = \pi/6 + \pi/4$.

Ans. _____

4. (20 p'ts.) Find $\lim_{\theta \rightarrow 0} \sin(2\theta) \cot(5\theta)$.

Ans. _____

5. (20 p'ts.) Find all horizontal and vertical asymptotes of

$$f(x) = \frac{2x^2 - 17x + 35}{x^2 - 6x + 5}.$$

Ans. _____

6. (20 p'ts.)

$$f(t) = \begin{cases} \frac{t^3-8}{t-2} & t \neq 2 \\ 4 & t = 2. \end{cases}$$

Is $f(t)$ continuous at $t = 2$? Justify your answer.

Ans. _____

