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OH: M 11-12pm / ML: Th 1-3pm

3A: Week 3 Exam 1 Practice Worksheet

Name:

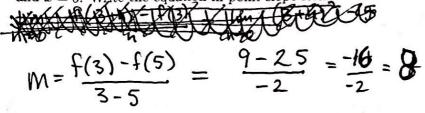
"A recall is worth a thousand repetitions"
-Dr. Wayne Iba

Collaborators:

Section Day/Time:

Exam 1 Practice Worksheet

1. Find an equation of the line that passes through the points on the graph $f(x) = x^2$ when x = 3 and x = 5. Write the equation in point-slope form.



 $\Rightarrow y - 3^{2} = 8(x - 3)$ $\Rightarrow y - 9 = 8(x - 3)$ $y - 5^{2} = 8(x - 5)$ = y - 25 = 8(x - 5)

2. The point (5,1) is on the graph of $f(x) = \sqrt{x-4}$.

a) Compute the slope of the secant line through (5,1) and the point that is on the graph of f(x) at x = 5.01.

$$M = \frac{f(5.01) - f(5)}{5.01 - 5} = \frac{\sqrt{5.01 - 4} - 1}{0.01} = \boxed{0.4987}$$

b) Use this answer to guess the slope of the tangent line to f(x) at the point (5,1).

3. Evaluate the limit $\lim_{h\to 0} \frac{\sqrt{1+h}-1}{h}$.

Evaluate the limit
$$\lim_{h\to 0} \frac{1}{h} = \lim_{h\to 0} \frac{1}{h} + 1$$

$$\lim_{h\to 0} \frac{1}{h} + 1 = \lim_{h\to 0} \frac{1}{h} + 1$$

$$\lim_{h\to 0} \frac{1}{h} + 1 = \lim_{h\to 0} \frac{1}{h} + 1$$

$$\lim_{h\to 0} \frac{1}{h} + 1 = \lim_{h\to 0} \frac{1}{h} = \frac{1}{2}$$

$$\lim_{h\to 0} \frac{1}{1+h} + 1 = \frac{1}{2}$$

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