Principles of Grading

General Grading Tips

General Grading Tips

- **Be consistent – always use a rubric!**

General Grading Tips

- **Be consistent – always use a rubric!**
- Read a few papers before you start

General Grading Tips

- **Be consistent – always use a rubric!**
- Read a few papers before you start
- Grade problem-by-problem

General Grading Tips

- **Be consistent – always use a rubric!**
- Read a few papers before you start
- Grade problem-by-problem
- Grade without looking at names

General Grading Tips

- **Be consistent – always use a rubric!**
- Read a few papers before you start
- Grade problem-by-problem
- Grade without looking at names
- Write constructive comments

General Grading Tips

- **Be consistent – always use a rubric!**
- Read a few papers before you start
- Grade problem-by-problem
- Grade without looking at names
- Write constructive comments
- Discuss common mistakes in class

General Grading Tips

- **Be consistent – always use a rubric!**
- Read a few papers before you start
- Grade problem-by-problem
- Grade without looking at names
- Write constructive comments
- Discuss common mistakes in class
- Keep backups of your grades (and don’t email grades)

Optimizing Your Time

Optimizing Your Time

- **Follow the rubric!**

Optimizing Your Time

- **Follow the rubric!**
- Forgive tiny mistakes

Optimizing Your Time

- **Follow the rubric!**
- Forgive tiny mistakes
- Don’t waste time reading illegible work

Optimizing Your Time

- **Follow the rubric!**
- Forgive tiny mistakes
- Don’t waste time reading illegible work
- Don’t write too many comments

Optimizing Your Time

- **Follow the rubric!**
- Forgive tiny mistakes
- Don’t waste time reading illegible work
- Don’t write too many comments
- Don’t give points for extraneous writing

Optimizing Your Time

- **Follow the rubric!**
- Forgive tiny mistakes
- Don’t waste time reading illegible work
- Don’t write too many comments
- Don’t give points for extraneous writing
- Grade everything in one sitting

2. Does the midpoint rule overestimate or underestimate $\int_1^8 x^2\,dx$? Explain.

Task

Exam Problem #2				

2. Does the midpoint rule overestimate or underestimate $\int_1^8 x^2\,dx$? Explain.

Criteria

Exam Problem #2				
Answer				
Explanation				
Organization				

2. Does the midpoint rule overestimate or underestimate $\int_1^8 x^2\,dx$? Explain.

Levels of Performance

Exam Problem #2				
	Excellent	**Good**	**Needs Work**	**Poor**
Answer				
Explanation				
Organization				

2. Does the midpoint rule overestimate or underestimate $\int_1^8 x^2\,dx$? Explain.

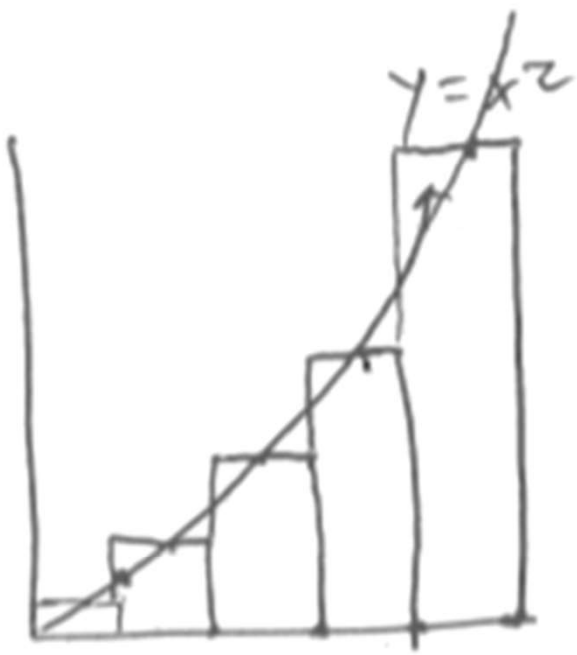
Descriptions of Levels of Performance

Exam Problem #2				
	Excellent	**Good**	**Needs Work**	**Poor**
Answer	"Underestimate"	--	--	"Overestimate" or no answer
Explanation	Clear and complete mathematical justification	Clear justification, but not complete	Justification lacks clarity or is vague	Justification is completely incorrect or absent
Organization	Neat, logically organized, and easy to follow	--	Somewhere in-between	Illegible

2. Does the midpoint rule overestimate or underestimate $\int_1^8 x^2\,dx$? Explain.

Points

Exam Problem #2				
	Excellent	**Good**	**Needs Work**	**Poor**
Answer (2 points)	"Underestimate" (2 points)	--	--	"Overestimate" or no answer (0 points)
Explanation (6 points)	Clear and complete mathematical justification (6 points)	Clear justification, but not complete (4 points)	Justification lacks clarity or is vague (2 points)	Justification is completely incorrect or absent (0 points)
Organization (2 points)	Neat, logically organized, and easy to follow (2 points)	--	Somewhere in-between (1 point)	Illegible (0 points)



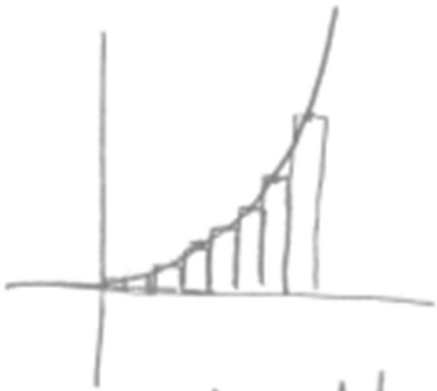
The midpoint rule would over estimate the integral $\int_1^8 x^2\,dx$. We can see this on the diagram at the left. The area of the rectangles above the line $y=x^2$ is always greater than the area enclosed between the line $y=x^2$ and any two adjacent rectangles

2. Does the midpoint rule overestimate or underestimate $\int_1^8 x^2\,dx$? Explain.

Exam Problem #2				
	Excellent	**Good**	**Needs Work**	**Poor**
Answer (2 points)	"Underestimate" (2 points)	--	--	"Overestimate" or no answer (0 points)
Explanation (6 points)	Clear and complete mathematical justification (6 points)	Clear justification, but not complete (4 points)	Justification lacks clarity or is vague (2 points)	Justification is completely incorrect or absent (0 points)
Organization (2 points)	Neat, logically organized, and easy to follow (2 points)	--	Somewhere in-between (1 point)	Illegible (0 points)

$C_j = (j - \frac{1}{2})\Delta x$ ✓ $C_2 = (2 - \frac{1}{2})\frac{7}{N}$ $C_j = (j - \frac{1}{2})\frac{7}{N}$

$M_n = \Delta x(f(c_1) + f(c_2) + f(c_3) + f(c_4) + \ldots)$



This method will be a very close underestimation because the height of the rectangles is the midpoint between two y values, so most of the rectangle will lie beneath the line $y = x^2$, while a smaller portion will lie above the graph.

2. Does the midpoint rule overestimate or underestimate $\int_1^8 x^2\,dx$? Explain.

Exam Problem #2				
	Excellent	**Good**	**Needs Work**	**Poor**
Answer (2 points)	"Underestimate" (2 points)	--	--	"Overestimate" or no answer (0 points)
Explanation (6 points)	Clear and complete mathematical justification (6 points)	Clear justification, but not complete (4 points)	Justification lacks clarity or is vague (2 points)	Justification is completely incorrect or absent (0 points)
Organization (2 points)	Neat, logically organized, and easy to follow (2 points)	--	Somewhere in-between (1 point)	Illegible (0 points)

$\Delta X = 1$

$$M_N = \Delta X \left(\frac{4+1}{2} + \frac{9+4}{2} + \frac{16+9}{2} + \frac{25+16}{2} + \frac{36+25}{2} + \frac{49+36}{2} + \frac{64+49}{2} \right)$$

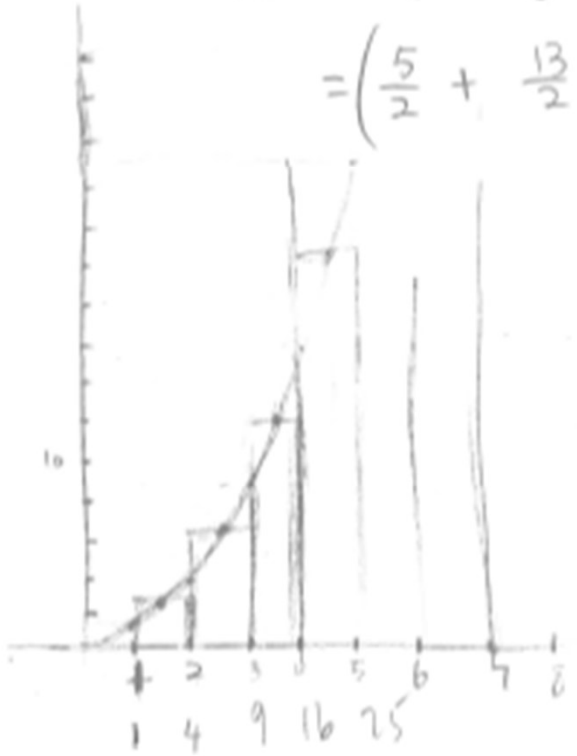
$$= \left(\frac{5}{2} + \frac{13}{2} + \frac{25}{2} + \frac{41}{2} + \frac{61}{2} + \frac{85}{2} + \frac{113}{2} \right)$$

$$= (7.5 + 6.5 + 12.5 + 20.5 + 30.5 + 42.5 + 56.5)$$

$$= (9 + 33 + 73 + 56.5)$$

$$= 65.5 + 106$$

$$= 171.5$$



It's underestimate because midpoint rule takes the average of each of two adjacent points

2. Does the midpoint rule overestimate or underestimate $\int_1^8 x^2\,dx$? Explain.

Exam Problem #2				
	Excellent	**Good**	**Needs Work**	**Poor**
Answer (2 points)	"Underestimate" (2 points)	--	--	"Overestimate" or no answer (0 points)
Explanation (6 points)	Clear and complete mathematical justification (6 points)	Clear justification, but not complete (4 points)	Justification lacks clarity or is vague (2 points)	Justification is completely incorrect or absent (0 points)
Organization (2 points)	Neat, logically organized, and easy to follow (2 points)	--	Somewhere in-between (1 point)	Illegible (0 points)

① Assume M_7 then $\Delta x = \frac{8-1}{7} = 1$

$$M_7 = 1 \times \frac{9}{4} + 1 \times \frac{25}{4} + 1 \times \frac{49}{4} + 1 \times \frac{81}{4} + 1 \times \frac{121}{4} + 1 \times \frac{169}{4} + 1 \times \frac{225}{4}$$

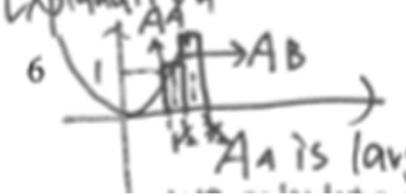
$$= \frac{34 + 130 + 290 + 225}{4}$$

$$= \frac{164 + 515}{4}$$

$$= \frac{679}{4}$$

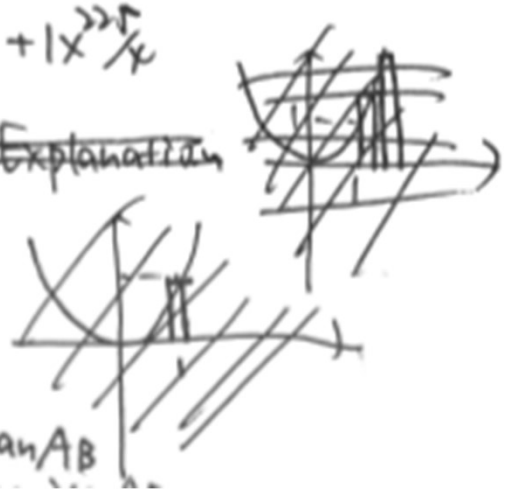
② Overestimate

③ Explanation



A_A is larger than A_B

Explanation



2. Does the midpoint rule overestimate or underestimate $\int_1^8 x^2\,dx$? Explain.

Exam Problem #2				
	Excellent	**Good**	**Needs Work**	**Poor**
Answer (2 points)	"Underestimate" (2 points)	--	--	"Overestimate" or no answer (0 points)
Explanation (6 points)	Clear and complete mathematical justification (6 points)	Clear justification, but not complete (4 points)	Justification lacks clarity or is vague (2 points)	Justification is completely incorrect or absent (0 points)
Organization (2 points)	Neat, logically organized, and easy to follow (2 points)	--	Somewhere in-between (1 point)	Illegible (0 points)

Your Turn to Make a Rubric!

Exam Grading Logistics

Exam Grading Logistics

- Exam grading room: Malott 260

Exam Grading Logistics

- Exam grading room: Malott 260
- Do not take exams out of Malott

Exam Grading Logistics

- Exam grading room: Malott 260
- Do not take exams out of Malott
- Do not leave exams unattended

Exam Grading Logistics

- Exam grading room: Malott 260
- Do not take exams out of Malott
- Do not leave exams unattended
- Grade exams within 72 hours

Exam Grading Logistics

- Exam grading room: Malott 260
- Do not take exams out of Malott
- Do not leave exams unattended
- Grade exams within 72 hours
- Only take a few sections at a time to grade

Exam Grading Logistics

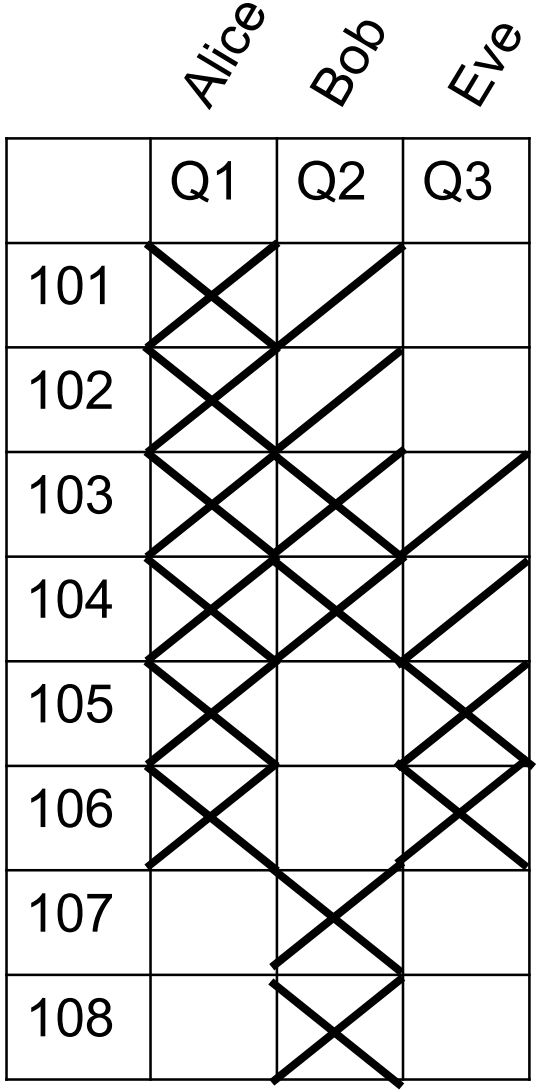
- Exam grading room: Malott 260
- Do not take exams out of Malott
- Do not leave exams unattended
- Grade exams within 72 hours
- Only take a few sections at a time to grade
- Keep backups of your grades

Exam Grading Logistics

- Exam grading room: Malott 260
- Do not take exams out of Malott
- Do not leave exams unattended
- Grade exams within 72 hours
- Only take a few sections at a time to grade
- Keep backups of your grades
- FERPA

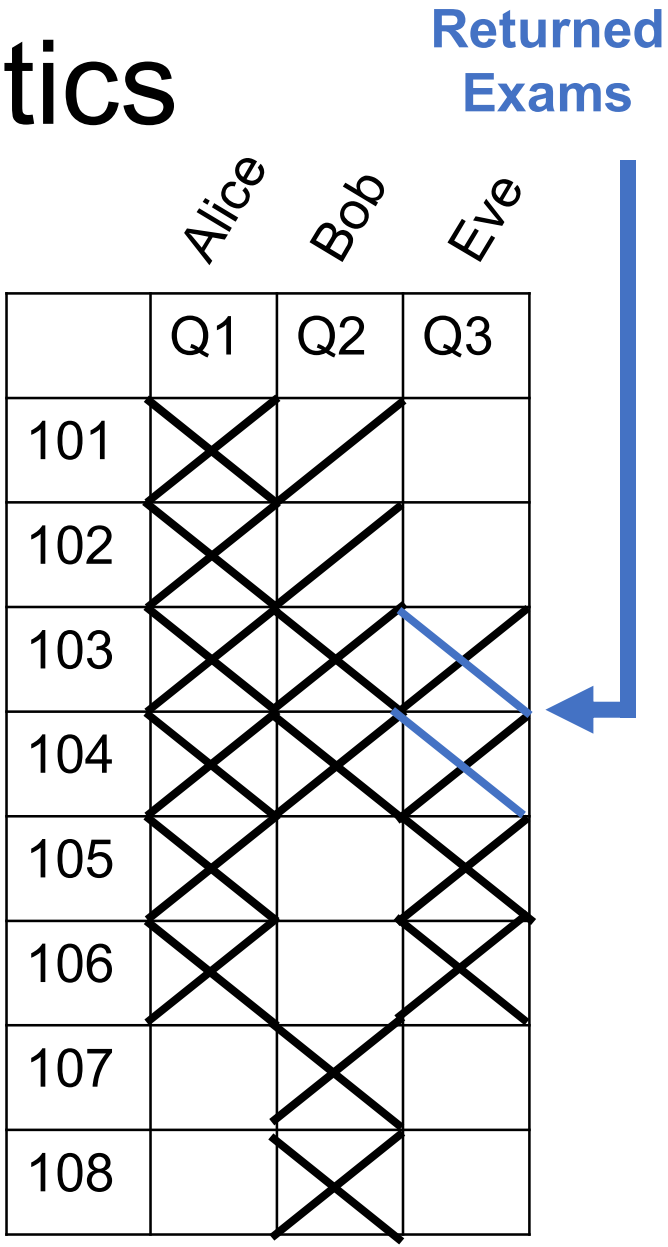
Exam Grading Logistics

- Exam grading room: Malott 260
- Do not take exams out of Malott
- Do not leave exams unattended
- Grade exams within 72 hours
- Only take a few sections at a time to grade
- Keep backups of your grades
- FERPA



Exam Grading Logistics

- Exam grading room: Malott 260
- Do not take exams out of Malott
- Do not leave exams unattended
- Grade exams within 72 hours
- Only take a few sections at a time to grade
- Keep backups of your grades
- FERPA



Exam Grading Logistics

- Exam grading room: Malott 260
- Do not take exams out of Malott
- Do not leave exams unattended
- Grade exams within 72 hours
- Only take a few sections at a time to grade
- Keep backups of your grades
- FERPA