

Exam 3 – Grading Guidelines

Problem 1a	
Work on Problem	Points Awarded
Finds correct derivative	1 point
Sets up correct sign line	1 point
Gives correct intervals	½ point for increasing and ½ point for decreasing
Notes:	
<ul style="list-style-type: none"> No ¼ points awarded. 	

Problem 1b	
Work on Problem	Points Awarded
Finds local maximum/minimum value	½ point for each
States local max/min as point	½ point for each
Notes:	

Problem 1c	
Work on Problem	Points Awarded
Finds correct second derivative based on a.	1 point
Sets up correct sign line	1 point
Gives correct intervals	½ point for concave up; ½ point for concave dwn.
Notes:	
No ¼ points awarded.	
Subtract 1 point if they reverse the concavity for the intervals and their sign line.	

Problem 1d	
Work on Problem	Points Awarded
Finds y – value for inflection point	1 point
States inflection point as a point	1 point
Notes:	

Problem 1e	
Work on Problem	Points Awarded
Gives correct shape of graph	1 point
Plot graph correctly through intercepts	1 point
Notes:	
<ul style="list-style-type: none"> If they have the correct shape, but do not use the intercepts, subtract 1 point. If they plot a graph through the intercepts, but do not give the correct shape, subtract 1 point. If graph is correct for their information in parts a – f, give full credit. 	

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Problem 2a	
Work on Problem	Points Awarded
Solve for variable in constraint	1 point
State optimization equation in terms of one var	1 point
State domain	1 point
Notes: <ul style="list-style-type: none"> • -1/2 if they have the correct area equation but it is in part b • -2 for $\sqrt{36-b^2}=6-b$ • -1/2 for domain $0 < b$ 	

Problem 2b	
Work on Problem	Points Awarded
Find correct derivative.	2 points
Find critical points.	1 points
Verify maximum.	2 point
Notes: <ul style="list-style-type: none"> • -3 incorrect algebra or set up caused problem to become significantly simpler than intended but work shown is correct based on previous work. • -4 same about simplification but also forgot or make error in verification step. 	

Problem 2c	
Work on Problem	Points Awarded
Give correct base with units	1 point
Give correct height with units.	1 point
Notes: <ul style="list-style-type: none"> • If no units, subtract 1 point. • If they give the correct maximum area, but not the base and height, subtract 1 point. • Graded based on parts a and b but no credit given if answer did not make sense in context of problem. 	

Problem 3	
Work on Problem	Points Awarded
Finds correct antiderivative	1 point for each
Correctly solves for constant	1 point for each
States equation with found constant	1 point for each
Notes: <p>Subtract ½ point if they use the integration symbol but leave off dt.</p> <p>Subtract ½ point for algebra/trig mistakes.</p> <p>Subtract ½ point if miss the antiderivative of 1 is t.</p> <p>Subtract ½ point if use x instead of t.</p>	

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Problem 4	
Work on Problem	Points Awarded
Correctly applies l'Hopital's Rule	2 point (1 pt. for each derivative)
Correctly applies l'Hopital's Rule again	1 point (1/2 pt. for each derivative)
Correctly evaluates limit	1 point
Notes: <ul style="list-style-type: none"> • Subtract 2 points for ½ correct 1st application of LR that ends problem. • Subtract 1 point for poor limit notation. • Subtract 1 point for e^0. • Subtract ½ point if they apply LR, but do not give notation or phrasing to indicate this. • Subtract 2 points if they continue to apply LR when they do not have an indeterminate form. 	

Problem 5	
Work on Problem	Points Awarded
Correctly uses logarithms to simplify problem	1 point
Correctly applies l'Hopital's Rule	2 points (1 pt for each derivative)
Correctly evaluates limit	1 point
Correctly applies rules of inverses to find orig limit	1 point
Notes: <ul style="list-style-type: none"> • Subtract ½ point if they apply LR, but do not give notation or phrasing to indicate this. • Subtract 2 points if they continue to apply LR when they do not have an indeterminate form. • Subtract ½ point for incorrect notation when using logarithms. 	

Problem 6	
Work on Problem	Points Awarded
Correctly applies l'Hopital's Rule	2 points (1 pt for each derivative)
Correctly evaluates limit	2 points
Notes: <ul style="list-style-type: none"> • Subtract ½ point if they apply LR, but do not give notation or phrasing to indicate this. • Subtract 2 points if they continue to apply LR when they do not have an indeterminate form. • Subtract 1 point if $1/\infty$ goes to infinity. • Subtract 2 points if $1/e^x$ goes to infinity. 	

Problem 7	
Work on Problem	Points Awarded
Correctly finds antiderivative of e^x	2 points
Correctly applies rules for kx	2 points
Notes: <ul style="list-style-type: none"> • Subtract ½ point if missing +C • Subtract 1.5 points if state coefficient as $-2/3$ • Subtract ½ point if give $-2/3$ as coefficient with correct intermediate step (algebra mistake). • Subtract 3 points if use power rule. 	

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Problem 8	
Work on Problem	Points Awarded
Correctly keeps constant	1 point
Finds correct integral of $1/x$	1 point
Notes:	
<ul style="list-style-type: none"> • Subtract $\frac{1}{2}$ point if missing $+C$ • Subtract $\frac{1}{2}$ point if missing absolute value on natural logarithm • Subtract 1 point if show work resulting in $\frac{3}{10}x^2 + C$, i.e. gets point for constant multiplier. • Subtract 2 points if shows no work, just $\frac{3}{10}x^2 + C$ 	

Problem 9	
Work on Problem	Points Awarded
Correctly simplifies integral	2 points
Correctly finds integral of cosine	1 point
Correctly finds integral of 1	1 point
Notes:	
<ul style="list-style-type: none"> • Subtract $\frac{1}{2}$ point if missing $+C$ 	

Problem 10	
Work on Problem	Points Awarded
Students scantron is not turned sideways in stack	1 point
Notes:	
<ul style="list-style-type: none"> • If student checks boxes, and scantron comes back with problem, subtract 1 point. 	