Principles of Calculus Modeling: An Interactive Approach by Donald Kreider, Dwight Lahr, and Susan Diesel Exercises for Section 4.7

Homework problems copyright ©2000–2005 by Donald L. Kreider, C. Dwight Lahr, Susan J. Diesel.

10. (1 pt) 110. (1 pt) 110. (1 pt) 110. (1 pt) 110. (1 pt) 110. (1 pt) 110. (1 pt) 111.		
$f(x) = x^2 \text{ It may be useful to make a sketch of the region.} Area =$	1. (1 pt) Find the area of the plane region bounded by $f(x) = \sqrt{x}$ and	10. (1 pt) Find the area of the region in the plane bounded by the curve
2. (1 pt) Find the area in the plane bounded by the two parabolas $y = -4x^2 - 80x + 122$ and $y = -4x^2 - 2x - 10$. Area =	$f(x) = x^2$. It may be useful to make a sketch of the region. Area = square units	$y = \cos(x)$ and the line $y = \frac{-1}{8}x + \frac{1}{16}\pi$. Since $\cos(x)$ is periodic, only find the region bounded by the line and the curve
Find the area in the plane bounded by the two parabolas $y = 2x^2 - 80x + 122$ and $y = -4x^2 - 2x - 10$. Area =	2. (1 pt)	between $-\frac{\pi}{2}$ and $-\frac{\pi}{2}$ It may be useful to make a sketch of the
$\begin{aligned} 2x^2 - 80x + 122 \text{ and } y = -4x^2 - 2x - 10. \\ Area =$	Find the area in the plane bounded by the two parabolas $y =$	region You may use an applet Maple or eacther computer
Area =	$2x^2 - 80x + 122$ and $y = -4x^2 - 2x - 10$.	algebra program to find where the curve and the line intersect
I. (1 pt)II. (1 pt)II. (1 pt)II. (1 pt)Find the area of the region bounded by the y-axis and the curve y-fax - 70 and the line y + 2x = -10?Axea =	Area = square units	Area = square units
What is the area of the region between the parabola $y = -4x^2 - 34x - 70$ and the line $y + 2x = -10$? Area =	3. (1 pt)	11. (1 nt)
34x - 70 and the line $y + 2x = -10$?Area =	What is the area of the region between the parabola $y = -4x^2 - 4x^2 -$	Find the area of the region bounded by the y-axis and the curve
Area =	34x - 70 and the line $y + 2x = -10$?	with equation $y^2 - 16y + 10x = 0$.
Image: A 2.667 square unitsB. 5.333 square unitsC. 277.333 square unitsD. 64.000 square unitsE5.333 square units 4. (1 pt)Find the area in the plane bounded by the two curves $f(x) = 4x^2$ Area =	Area =	Area =
B. 5.333 square units C. 277.333 square units D. 64.000 square units E5.333 square units Find the area in the plane bounded by the two curves $f(x) = 4x^2$ and $g(x) = \frac{28}{6x^2 + 1}$. Area =	A. 2.667 square units	12. (1 pt)
C. 277.333 square units D. 64.000 square units E. -5.333 square units 4. (1 pt) Find the area in the plane bounded by the two curves $f(x) = 4x^2$ and $g(x) = \frac{28}{6x^2 + 1}$. Area =	B. 5.333 square units	Find the area between the curves $y^2 = 17x$ and $x^2 = 17y$.
D. 64.000 square units E5.333 square units 13. (1 pt) 13. (1 pt) 14. (1 pt) 15. (1 pt) 16. (1 pt) 16. (1 pt) 16. (1 pt) 16. (1 pt) 17. (1	C. 277.333 square units	Area =
E5.333 square unitsFind the area in the plane bounded by the two curves $f(x) = 4x^2$ Area =	D. 64.000 square units	13. (1 pt)
4. (1 pt)Find the area in the plane bounded by the two curves $f(x) = 4x^2$ and $g(x) = \frac{28}{6x^2 + 1}$.Area =	E5.333 square units	Find the area between the curves $y = cos(x)$ and $y = sin(x)$ on
Find the area in the plane bounded by the two curves $f(x) = 4x^2$ and $g(x) = \frac{28}{6x^2 + 1}$. Area =	4. (1 pt)	the interval $\left[\frac{21\pi}{4}, \frac{25\pi}{4}\right]$.
Ind $g(x) = \frac{28}{6x^2 + 1}$. Area =	Find the area in the plane bounded by the two curves $f(x) = 4x^2$	Area =
Area =	and $g(\mathbf{r}) = \frac{28}{2}$	14. (1 pt)
Area =	$\frac{d}{dx^2} = \frac{6x^2 + 1}{6x^2 + 1}$	Find the area between the curves $x - y = 10$ and $y^2 = 5x$.
5. (1 pt) Find the area in the plane bounded by the two curves $f(x) = \frac{1}{2}x^2 + 80x$ and $g(x) = 9x^2 - x$. Area =	Area = square units	Area =
Find the area in the plane bounded by the two curves $f(x) = \frac{x^3 - 9x^2 + 80x \text{ and } g(x) = 9x^2 - x.}{8x^3 - 9x^2 + 80x \text{ and } g(x) = 9x^2 - x.}$ Area =	5. (1 pt)	15. (1 pt) Consider the rectangle of width 9, height 81 with lower left cor
$\frac{e^{x} - 9x^{2} + 80x \text{ and } g(x) = 9x^{2} - x.$ Area =	Find the area in the plane bounded by the two curves $f(x) =$	ner at the origin. The parabola $y = x^2$ splits this rectangle into
Area =	$x^{3} - 9x^{2} + 80x$ and $g(x) = 9x^{2} - x$.	lower and upper regions. What is the ratio of the lower region's
6. (1 pt) Find the area in the plane bounded by the two curves $y = \sqrt{x}$ Area =	Area = square units	area to the upper region's area?
Find the area in the plane bounded by the two curves $y = \sqrt{x}$ Area =	6. (1 pt)	Ratio =
and $y = 8x$. Area =	Find the area in the plane bounded by the two curves $y = \sqrt{x}$	16. (1 pt)
Area =	and $y = 8x$.	Consider the rectangle of width 9, height 4 with lower left cor-
7. (1 pt)Find the area in the plane bounded by the two curves $y = x $ and $y = (x+2)^2 - 9$. It may be useful to make a sketch of the region.Area =	Area = square units	ner at the origin. The curve $y = \frac{4x^{14}}{3x^{14}}$ splits this rectangle into
Find the area in the plane bounded by the two curves $y = x $ and $y = (x+2)^2 - 9$. It may be useful to make a sketch of the region. Area =	7. (1 pt)	where and lower regions. What is the ratio of the upper region's
$y = (x+2)^2 - 9. \text{ It may be useful to make a sketch of the region.} Area = square units 8. (1 pt) Find the area in the plane bounded by the curves x = y^2, y = \frac{1}{5}x - 7.2, y = -2, and y = 7.Area = square units9. (1 pt)Find the upper portion of the area in the plane bounded by the curves y = \sqrt{1 - x^2}, y = 0, and to the right of y = 6x + 1. It may be useful to make a sketch of the region.What is the area of the region bounded by the curve y = \sin(x).What is the area of the region bounded by the curve y = \sin(x).$	Find the area in the plane bounded by the two curves $y = x $ and	area to the lower region's area?
Area =	$y = (x+2)^2 - 9$. It may be useful to make a sketch of the region.	Ratio =
8. (1 pt)Find the area in the plane bounded by the curves $x = y^2$, $y = \frac{1}{5}x - 7.2$, $y = -2$, and $y = 7$.Area =	Area = square units	17. (1 pt)
Find the area in the plane bounded by the curves $x = y^2$, $y = \frac{1}{5}x - 7.2$, $y = -2$, and $y = 7$. Area =	8. (1 pt)	Find the area between the curves $y = x^2 + 14x + 17$ and $y = x$
$y = \frac{1}{5}x - 7.2, y = -2, \text{ and } y = 7.$ Area =	Find the area in the plane bounded by the curves $x = y^2$,	over the interval [-36,27].
$\frac{5}{9. (1 \text{ pt})}$ Find the upper portion of the area in the plane bounded by the curves $y = \sqrt{1 - x^2}$, $y = 0$, and to the right of $y = 6x + 1$. It may be useful to make a sketch of the region. $\frac{18. (1 \text{ pt})}{What is the area of the region bounded by y = e^x, y = 1, and x = 10?\frac{19. (1 \text{ pt})}{19. (1 \text{ pt})} What is the area of the region bounded by the curve y = \sin(x)$	$y = \frac{1}{-x} - 7.2$, $y = -2$, and $y = 7$.	Area =
9. (1 pt) Find the upper portion of the area in the plane bounded by the curves $y = \sqrt{1 - x^2}$, $y = 0$, and to the right of $y = 6x + 1$. It may be useful to make a sketch of the region. What is the area of the region bounded by $y = e^x$, $y = 1$, and $x = 10$? 19. (1 pt) What is the area of the region bounded by the curve $y = \sin(x)$.	5 Area = square units	18. (1 pt)
9. (1 pt) Find the upper portion of the area in the plane bounded by the curves $y = \sqrt{1 - x^2}$, $y = 0$, and to the right of $y = 6x + 1$. It may be useful to make a sketch of the region. What is the area of the region bounded by the curve $y = \sin(x)$.		What is the area of the region bounded by $y = e^x$, $y = 1$, and
Find the upper portion of the area in the plane bounded by the curves $y = \sqrt{1 - x^2}$, $y = 0$, and to the right of $y = 6x + 1$. It may be useful to make a sketch of the region. What is the area of the region bounded by the curve $y = \sin(x)$.	9. (1 pt)	x = 10?
curves $y = \sqrt{1 - x^2}$, $y = 0$, and to the right of $y = 6x + 1$. It may be useful to make a sketch of the region. 19. (1 pt) What is the area of the region bounded by the curve $y = \sin(x)$	Find the upper portion of the area in the plane bounded by the $\sqrt{1-2}$	
The use in the make a sketch of the region bounded by the curve $y = \sin(x)$	curves $y = \sqrt{1 - x^2}$, $y = 0$, and to the right of $y = 6x + 1$. It may be useful to make a sketch of the region	19. (1 pt)
Area – square units and the same surge flipped over the source the interval	Area – square units	what is the area of the region bounded by the curve $y = sin(x)$ and the same curve flipped over the x axis, over the interval
and the same curve inpped over the x axis, over the interval $[0.9\pi]?$	square units	$[0.9\pi]$?

1

Generated by the WeBWorK system ©WeBWorK Team, Department of Mathematics, University of Rochester