

First work through the recommended practice problems listed in the following table from the 11th edition of *Calculus of a Single Variable* by Larson and Edwards. You do not need to hand these in. Once you have completed these, then do the small sampling of questions below. Write full solutions (not just the final answer) in the space provided.

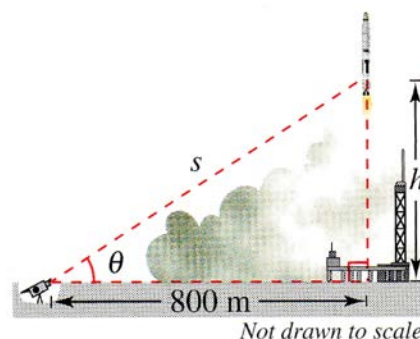
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5.7 Inverse Trigonometric Functions: Differentiation	7, 9, 11, 17, 21, 25, 27, 29, 33, 37, 39, 41, 43, 45, 47, 49, 51, 53, 55, 65, 87, 91
5.8 Inverse Trigonometric Functions: Integration	3, 5, 7, 11, 13, 15, 17, 19, 21, 23, 25, 31, 35, 39, 41, 61, 65
5.9 Hyperbolic Functions	5, 7, 13, 17, 19, 29, 31, 33, 35, 37, 41, 47, 49, 51, 57, 65, 67, 69, 73, 81, 91
7.1 Area of a Region Between Two Curves	7, 9, 11, 13, 17, 21, 23, 25, 39, 41, 61, 79, 83, 85

Sec 5.7 #36: Write the expression $\cos\left(\arcsin\frac{x-h}{r}\right)$ in algebraic form.

Sec 5.7 #52: Find the derivative of $y = x \arctan 2x - \frac{1}{4} \ln(1 + 4x^2)$.

Sec 5.7 #90: A television camera at ground level is filming the lift-off of a rocket at a point 800 meters from the launch pad. Let θ be the angle of elevation of the rocket and let s be the distance between the camera and the rocket (see figure). Write θ as a function of s for the period of time when the rocket is moving vertically. Differentiate the result to find $d\theta/dt$ in terms of s and ds/dt .



Sec 5.8 #34: Evaluate the definite integral $\int_0^{1/\sqrt{2}} \frac{\arccos x}{\sqrt{1-x^2}} dx$.

Sec 5.8 #40: Find the integral $\int \frac{2}{\sqrt{-x^2 + 4x}} dx$ by completing the square.

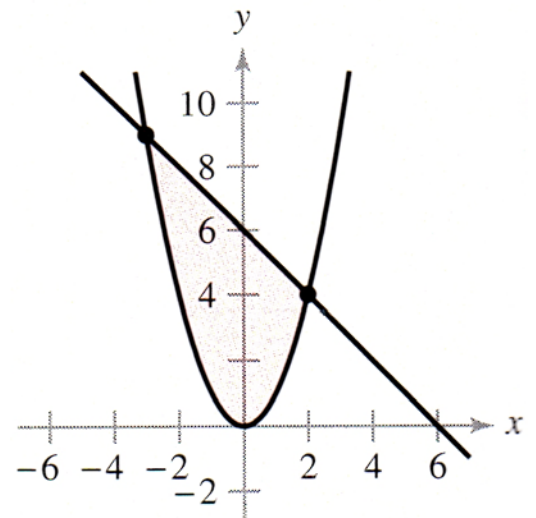
Sec 5.9 #36: Find an equation of the tangent line to the graph of $y = x^{\cosh x}$ at the point $(1, 1)$.

Sec 5.9 #50: Find the indefinite integral $\int \frac{\sinh x}{1 + \sinh^2 x} dx$.

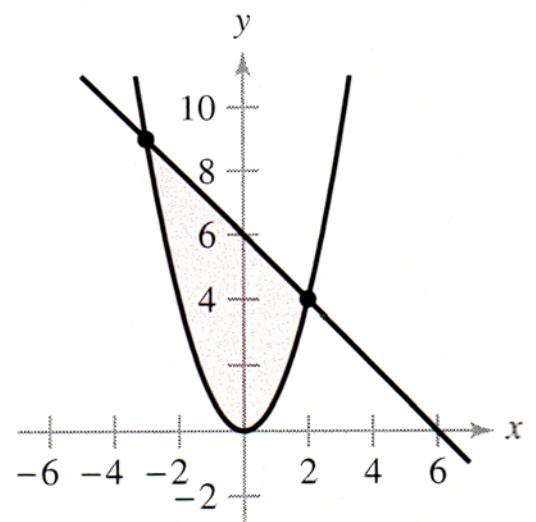
Sec 5.9 #70: Find the derivative of $y = \tanh^{-1}(\sin 2x)$.

Sec 7.1 #30: Find the area of the region bounded by the graphs of $y = x^2$ and $y = 6 - x$ by integrating

(a) with respect to x .



(b) with respect to y .



(c) Compare your results. Which method is simpler? In general, will this method always be simpler than the other one? Why or why not?