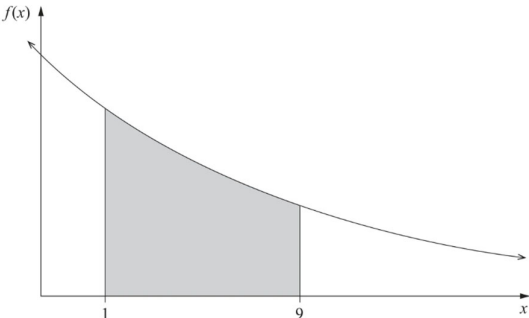


Question 1	
<p>QUESTION 5</p> <p>The gradient of the tangent at point A on the curve $y^2 = 4x$ is 1.36</p> <p>The x-coordinate of A is</p> <p>(A) 0.12</p> <p>(B) 0.46</p> <p>(C) 0.54</p> <p>(D) 1.47</p>	<p>Simple Familiar Technology Active 2020</p>
Question 2	
<p>QUESTION 3</p> <p>Determine the solution of the differential equation $\frac{dy}{dx} = \frac{\sin(2x)}{\cos(2x)}$ given $y = 0$ when $x = \frac{\pi}{5}$.</p> <p>(A) $y = -2\ln \cos(2x) - 2.35$</p> <p>(B) $y = -2\ln \cos(2x) + 2.35$</p> <p>(C) $y = -\frac{1}{2}\ln \cos(2x) - 0.59$</p> <p>(D) $y = -\frac{1}{2}\ln \cos(2x) + 0.59$</p>	<p>Simple Familiar Technology Active 2022</p>

Question 3	
<p>QUESTION 13 (6 marks)</p> <p>The area under the graph of the function $f(x) = 0.2e^{-0.2x}$ for $1 \leq x \leq 9$ is shaded.</p>	<p>Simple Familiar Technology Active 2021</p>
 <p style="text-align: center;">Not to scale</p>	
<p>a) Use Simpson's rule with four intervals to determine an approximation for this area. [4 marks]</p> <p>b) Use a calculus approach to evaluate the reasonableness of your area approximation from Question 13a). [2 marks]</p>	
Question 4	
<p>QUESTION 16 (6 marks)</p> <p>A curve modelled by the relation $xy^2 - y + \cos^{-1}(2x) = 1$, where $-0.35 \leq x \leq 0.27$ and $0 \leq y \leq 1$, intersects the y-axis at point A.</p> <p>Determine the equation of the tangent to the curve at point A.</p>	<p>Complex Familiar Technology Active 2023</p>