The original expression

$$\frac{5 \cdot \sin(x^2 \cdot 2)}{x}$$

After mental calculation:

$$(x^2)' = \log(x) \cdot 0 \cdot x^2 + 2 \cdot 1 \cdot x^{2-1}$$

It is well known that:

$$(x^2 \cdot 2)' = 2 \cdot (\log(x) \cdot 0 \cdot x^2 + 2 \cdot 1 \cdot x^{2-1}) + x^2 \cdot 0$$

Using WolframAlpha we have:

$$(\sin(x^2 \cdot 2))' = (2 \cdot (\log(x) \cdot 0 \cdot x^2 + 2 \cdot 1 \cdot x^{2-1}) + x^2 \cdot 0) \cdot \cos(x^2 \cdot 2)$$

Every child knows that:

$$(5 \cdot \sin(x^2 \cdot 2))' = \sin(x^2 \cdot 2) \cdot 0 + 5 \cdot (2 \cdot (\log(x) \cdot 0 \cdot x^2 + 2 \cdot 1 \cdot x^{2-1}) + x^2 \cdot 0) \cdot \cos(x^2 \cdot 2)$$

For a detailed explanation you should purchase the paid version:

$$(\frac{5 \cdot \sin(x^2 \cdot 2)}{x})' = \frac{x \cdot (\sin(x^2 \cdot 2) \cdot 0 + 5 \cdot (2 \cdot (\log(x) \cdot 0 \cdot x^2 + 2 \cdot 1 \cdot x^{2-1}) + x^2 \cdot 0) \cdot \cos(x^2 \cdot 2)) - 5 \cdot \sin(x^2 \cdot 2) \cdot}{x \cdot x}$$

The final expression

$$\frac{20 \cdot x \cdot x \cdot \cos(2 \cdot x^2) + (-5) \cdot \sin(2 \cdot x^2)}{x^2}$$