POW 23: College Prep Math

From UH 2016 Geometry

2.   If the length of a rectangle is increased by 40%, and its width is decreased by 30%, how is the area of the rectangle affected?

    (A)   The area decreases by 2%.
    (B)   The area increases by 10%.
    (C)   The area increases by 12%.
    (D)   The area increases by 0.88%.
    (E)   The area decreases by 7%.

POW 23: Pre-Calculus

From UH 2016 Algebra 2

1. Let a and b be the x-coordinates of the points where the function $f(x) = \dfrac{2x^3 + x^2}{x^3 + x^2 - 2x + 1}$

intersects its horizontal asymptote. Find the value of $ab^2 + a^2b$.

A. -6

B. -8

C. 8

D. 6

E. 0

> See Page 195 Summary on Horizontal and Oblique Asymptotes

2) Problem # 23: Polar coordinates, from UH 2016 Pre-Calculus

POW 23: Calculus AB

From UH 2016 Calculus

16. The region bounded by $y = e^x$, $y = 1$, and the line $x = 2$ is rotated about the y-axis. Which of the following integrals gives the volume of the solid which is generated:

$$(A) \quad \pi \int_0^2 e^{2x} \, dx, \qquad (B) \quad 2\pi \int_0^2 x(e^x - 1) \, dx, \qquad (C) \quad \pi \int_0^2 \left(e^{2x} - 1 \right) \, dx$$

$$(D) \quad 2\pi \int_1^{e^2} y(2 - \ln y) \, dy, \qquad (E) \quad \pi \int_1^{e^2} \left(4 - \ln^2 y \right) \, dy$$