

ZE

9,5 - 8,23  
8,23 - 6,96  
6,96 - 4,845  
4,845 - 3,5

A.

1. Zjednodušte: a)  $\frac{1}{1+\operatorname{tg} x} - \frac{\operatorname{cotg} x}{1+\operatorname{cotg} x} =$

$$= \frac{1}{1 + \frac{\sin x}{\cos x}} - \frac{\frac{\cos x}{\sin x}}{1 + \frac{\cos x}{\sin x}} = \frac{1}{\frac{\cos x + \sin x}{\cos x}} - \frac{\frac{\cos x}{\sin x}}{\frac{\sin x + \cos x}{\sin x}} = \frac{\cos x}{\cos x + \sin x} - \frac{\cos x}{\sin x + \cos x} = \frac{0}{1} = 0$$

46

b)  $\cos x \cdot (\operatorname{tg} x + \operatorname{cotg} x) =$

$$= \cos x \cdot \left( \frac{\sin x}{\cos x} + \frac{\cos x}{\sin x} \right) = \cos x \cdot \frac{\sin^2 x + \cos^2 x}{\cos x \cdot \sin x} = \frac{\cos x}{\cos x \cdot \sin x} = \frac{1}{\sin x}$$

2,56

2. Dokažte:  $\frac{1}{\cos x} - \sin x \cdot \operatorname{cotg} x = \cos x$

$$L = \frac{1}{\cos x} - \sin x \cdot \frac{\sin x}{\cos x} = \frac{1}{\cos x} - \frac{\sin^2 x}{\cos x} = \frac{1 - \sin^2 x}{\cos x} = \frac{\cos^2 x}{\cos x} = \cos x$$

$P = \cos x$

$L = P$

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B.

1. Zjednodušte: a)  $\frac{1}{1+\operatorname{cotg} x} - \frac{\operatorname{tg} x}{1+\operatorname{tg} x} =$

$$= \frac{1}{1 + \frac{\cos x}{\sin x}} - \frac{\frac{\sin x}{\cos x}}{1 + \frac{\sin x}{\cos x}} = \frac{1}{\frac{\sin x + \cos x}{\sin x}} - \frac{\frac{\sin x}{\cos x}}{\frac{\cos x + \sin x}{\cos x}} = \frac{\sin x}{\sin x + \cos x} - \frac{\sin x}{\cos x + \sin x} = \frac{0}{1} = 0$$

46

b)  $\sin x \cdot (\operatorname{tg} x + \operatorname{cotg} x) =$

$$= \sin x \cdot \left( \frac{\sin x}{\cos x} + \frac{\cos x}{\sin x} \right) = \sin x \cdot \frac{\sin^2 x + \cos^2 x}{\cos x \cdot \sin x} = \frac{\sin x}{\cos x \cdot \sin x} = \frac{1}{\cos x}$$

2,56

2. Dokažte:  $\frac{1}{\cos x} - \sin x \cdot \operatorname{cotg} x = \cos x$

$$L = \frac{1}{\cos x} - \sin x \cdot \frac{\sin x}{\cos x} = \frac{1}{\cos x} - \frac{\sin^2 x}{\cos x} = \frac{1 - \sin^2 x}{\cos x} = \frac{\cos^2 x}{\cos x} = \cos x$$

$P = \cos x$

$L = P$

36

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