

Omn 12 p.264 # 26 à 33 simplifie

26. $\tan x \cos^2 x$

$$= \frac{\sin x}{\cos x} \times \cos^2 x$$

$$= \sin x \cos x$$

28. $\frac{\sin x}{1 + \cos x} + \frac{\cos x}{\sin x}$

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

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

$$= \frac{1 + \cos x}{(1 + \cos x) \sin x} = \frac{1}{\sin x}$$

30. $2(\operatorname{cosec}^2 x - \cot^2 x)$

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

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

$$= 2 \left(\frac{\sin^2 x}{\sin^2 x} \right) = 2$$

32. $\frac{\sin^2 x}{\cos^2 x} + \sin x \operatorname{cosec} x$

$$= \frac{\sin^2 x}{\cos^2 x} + \sin x \frac{1}{\sin x}$$

$$= \frac{\sin^2 x}{\cos^2 x} + 1$$

$$= \frac{\sin^2 x + \cos^2 x}{\cos^2 x}$$

$$= \frac{1}{\cos^2 x} = \sec^2 x$$

27. $\operatorname{cosec}^2 x - \cot^2 x$

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

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

29. $(1 + \sin x)^2 + \cos^2 x$

$$= 1 + 2 \sin x + \sin^2 x + \cos^2 x$$

$$= 1 + 2 \sin x + 1$$

$$= 2 + 2 \sin x$$

$$= 2(1 + \sin x)$$

31. $\frac{\operatorname{cosec} x \times \sec x}{\cot^2 x}$

$$= \frac{\frac{1}{\sin x} \times \frac{1}{\cos x}}{\frac{\cos x}{\sin x}}$$

$$= \frac{1}{\sin x \cos x} \times \frac{\sin x}{\cos x}$$

$$= \frac{1}{\cos^2 x} = \sec^2 x$$

33. $\frac{\tan^2 x - \sin^2 x}{\tan^2 x \sin^2 x}$

$$= \frac{\tan^2 x}{\tan^2 x \sin^2 x} - \frac{\sin^2 x}{\tan^2 x \sin^2 x}$$

$$= \frac{1}{\sin^2 x} - \frac{1}{\tan^2 x}$$

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

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