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$$\begin{aligned} &= \lim_{t \rightarrow +\infty} [\text{Arctan } x]_0^t \\ &= \lim_{t \rightarrow +\infty} (\text{Arctan } t - 0) \\ &= \frac{\pi}{2} \end{aligned}$$

Therefore, $\int_{-\infty}^{+\infty} \frac{dx}{1+x^2} = \frac{\pi}{2} + \frac{\pi}{2} = \pi$

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$$= \lim_{t \rightarrow 2^+} \left[2u^{1/2} \right]_{t-2}^3$$

$$= \lim_{t \rightarrow 2^+} \left(2\sqrt{3} - 2(t-2)^{1/2} \right)$$

$$= 2\sqrt{3}$$

Required Exercises

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Answer Exercises in TC7.

Exercises 7.9 (1-18) on page 657-658

Exercises 7.10 (1-29) on page 664

Check your answers on A-161 and A-162.