

	Navn:		Skole:	
	Klasse: 20		Dato: 22. februar 2022	Fag: Matematik A

## Opgave 281

$$f(t) = a \cdot 0.98^t$$

$$a = 12000$$

Opgave A

$$f(10) = 12000 \cdot 0.98^{10}$$

$$f(10) = 9804,874$$

Opgave B

$$8000 = 12000 \cdot 0.98^t$$

$$\frac{8000}{12000} = 0.98^t \quad \text{Divider med 12000}$$

$$\log\left(\frac{8000}{12000}\right) = t \cdot \log(0.98) \quad \text{Log på begge sider}$$

$$\frac{\log\left(\frac{8000}{12000}\right)}{\log(0.98)} = t \quad \text{Divider med } \log(0.98)$$

$$t = \frac{\log\left(\frac{8000}{12000}\right)}{\log(0.98)} \quad \text{Byt sider}$$

$$t = 20,07 \quad \text{Udregn}$$

Opgave C

$$T_{\frac{1}{2}} = -\frac{\log(2)}{\log(0.98)} = 34,30962$$

Opgave D

$$100 = 12000 \cdot 0.98^t$$

$$\frac{100}{12000} = 0.98^t \quad \text{Divider med 12000}$$

$$\log\left(\frac{100}{12000}\right) = t \cdot \log(0.98) \quad \text{Log på begge sider}$$

$$\frac{\log\left(\frac{100}{12000}\right)}{\log(0.98)} = t \quad \text{Divider med } \log(0.98)$$

$$t = \frac{\log\left(\frac{100}{12000}\right)}{\log(0.98)} \quad \text{Byt sider}$$

$$t = 236,9728 \quad \text{Udregn}$$

$$t = 237 \quad \text{Rund op}$$