

# QCM d'autoévaluation, exercice 120 page 264

*Sésamath*

Maths TS obligatoire



## énoncé

Le nombre complexe  $\frac{1+i}{1-2i}$  est égal à :

- a)  $-\frac{1}{2}$
- b)  $1 - 3i$
- c)  $3 - i$
- d)  $-\frac{1}{5} + \frac{3}{5}i$

# correction

$$\frac{1+i}{1-2i} = \frac{(1+i)(1+2i)}{(1-2i)(1+2i)}$$

# correction

$$\begin{aligned}\frac{1+i}{1-2i} &= \frac{(1+i)(1+2i)}{(1-2i)(1+2i)} \\ &= \frac{1+2i+i+2i^2}{1^2+2^2}\end{aligned}$$

# correction

$$\begin{aligned}\frac{1+i}{1-2i} &= \frac{(1+i)(1+2i)}{(1-2i)(1+2i)} \\&= \frac{1+2i+i+2i^2}{1^2+2^2} \\&= \frac{1+3i-2}{5}\end{aligned}$$

# correction

$$\begin{aligned}\frac{1+i}{1-2i} &= \frac{(1+i)(1+2i)}{(1-2i)(1+2i)} \\&= \frac{1+2i+i+2i^2}{1^2+2^2} \\&= \frac{1+3i-2}{5} \\&= \frac{-1+3i}{5}\end{aligned}$$

# correction

$$\begin{aligned}\frac{1+i}{1-2i} &= \frac{(1+i)(1+2i)}{(1-2i)(1+2i)} \\&= \frac{1+2i+i+2i^2}{1^2+2^2} \\&= \frac{1+3i-2}{5} \\&= \frac{-1+3i}{5} \\&= -\frac{1}{5} + \frac{3}{5}i\end{aligned}$$

# correction

$$\begin{aligned}\frac{1+i}{1-2i} &= \frac{(1+i)(1+2i)}{(1-2i)(1+2i)} \\&= \frac{1+2i+i+2i^2}{1^2+2^2} \\&= \frac{1+3i-2}{5} \\&= \frac{-1+3i}{5} \\&= -\frac{1}{5} + \frac{3}{5}i\end{aligned}$$

réponse d)