Question #2 : Solution

The price-yield formula is

$$\frac{P(y) \; e^{yT}}{100} = e^{-My/2} + \frac{C}{1000 \left(1 - e^{-y/2}\right)} \left[1 - e^{-My/2}\right]$$

If we assume she pays the first payment immidiately ($T=0$)

and time to maturity is 5, then

$$\frac{P(y)}{100} = e^{-5y} + \frac{C}{1000 \left(1 - e^{-y/2}\right)} \left[1 - e^{-5y}\right]$$

we are given $C = 18$ and $y = 0.012$ and so

$$P(y) \simeq \$111.69$$

*** we could also use the approximation $e^{y} \simeq 1+y$ and

so $$\frac{P(y)}{100} = \left(1 + y\right)^{-M/2} + \frac{C}{500 y} \left[1 - (1+y)^{-M/2}\right]$$

Total tim yield to maturity is $y_T = \frac{c}{5P} + \frac{1}{T} \ln\left(\frac{100}{P}\right)$