



On March 1st, Michelin knows it will have to borrow 10 millions Euros in 3 months for 60 days

FRA negotiated, anticipating interest rates will rise.

### Quotations

5 month rates :  $7\frac{6}{8}$  -  $7\frac{7}{8}$

3 month rates :  $7\frac{4}{8}$  -  $7\frac{5}{8}$

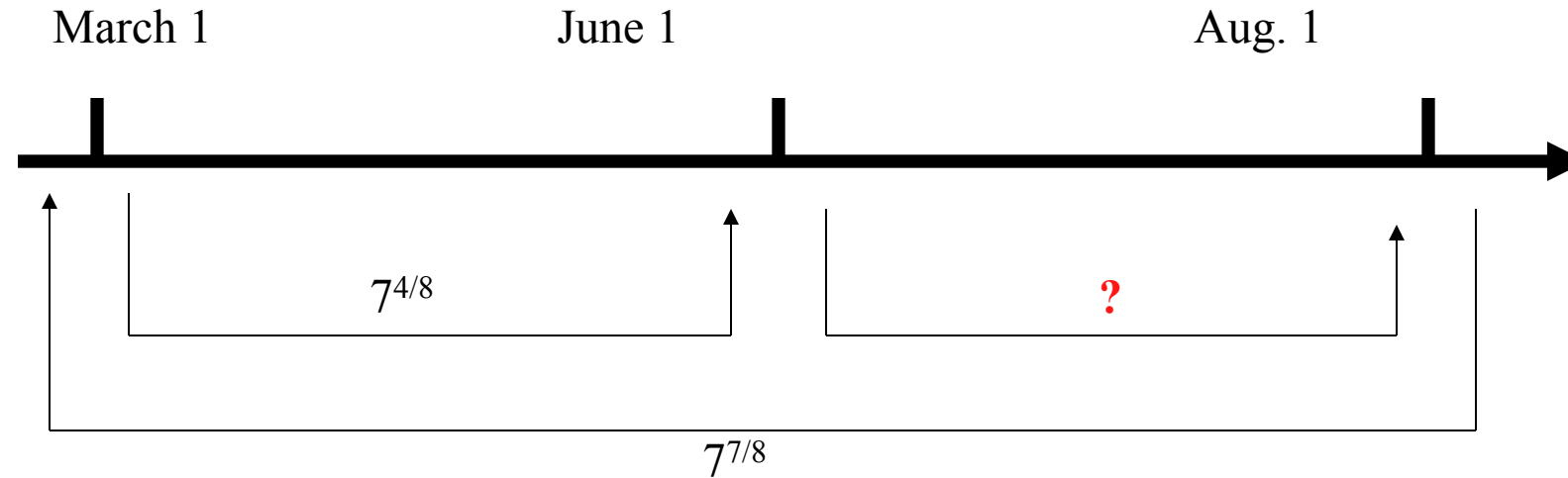
2 month rates :  $7\frac{3}{8}$  -  $7\frac{4}{8}$

1- FRA Rate ?

2- What happens if on June 1, the 2 month rate is  $9\frac{5}{8}$  -  $9\frac{6}{8}$  ?

3- What happens if on June 1, the 2 month rate is  $6\frac{1}{8}$  -  $6\frac{2}{8}$  ?

# Michelin



Q1

a  $S * (1 + 7,5\% * (90/360)) = 10\,000\,000$  Euros  
 $S = 9\,815\,950$  Euros

b  $9,81 * (1 + 7,875\% * (150/360)) = 10\,138\,036\dots$  Euros

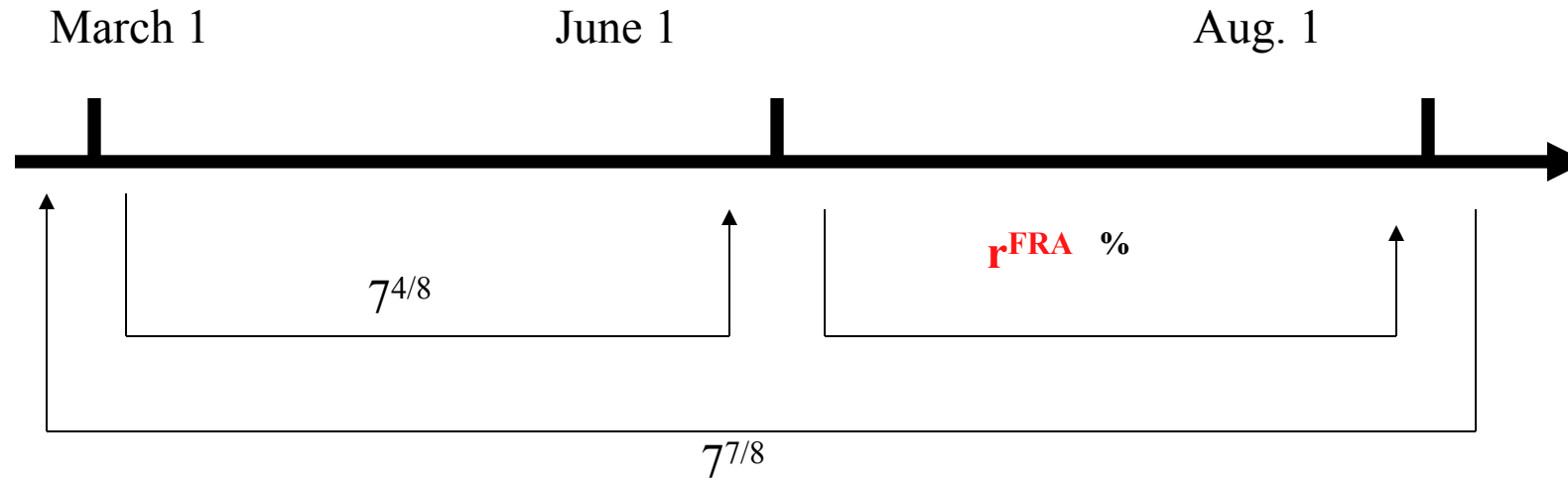
c  $10\,000\,000 * (r^{FRA} \% * (60/360)) = 10\,138\,036$  Euros

$r^{FRA} = 8.28 \%$



Michelin

OK



Q2 What happens if on June 1, the 2 month rate is  $9\frac{5}{8}$  -  $9\frac{6}{8}$  ?

The bank gives to Michelin  $(9\frac{6}{8}\% - 8.28\%) * 60/360 * 10\,000\,000$   
= 24 463 Euros

