

## FA Module 7 Interest coverage ratio practice exam questions

covering effective tax rate, net income, pre-tax income, interest expense, fixed charges, other fixed charges, interest coverage ratio, fixed charge coverage ratio

A firm has

- ! an effective tax rate of 10%
- ! an interest coverage ratio of 5.5
- ! a fixed charge coverage ratio of 4.7
- ! net income of 229

Question 7.1: Pre-tax income

What is the firm's pre-tax income?

Answer 7.1: net income = pre-tax income  $\times$  (1 – tax rate)  
 $\Rightarrow$  pre-tax income = net income / (1 – tax rate) = 229 / (1 – 10%) = 254.44

Question 7.2: Tax expense

What is the firm's tax expense?

Answer 7.2: 254.44 – 229 = 25.44

Tax expense = (net income – pre-tax income)

Question 7.3: Interest expense

What is the firm's interest expense?

Answer 7.3: (229 + 25.44) / (5.5 – 1) = 56.54

interest coverage ratio = (net income + tax expense + interest expense) / interest expense  
 $\Rightarrow$  interest coverage ratio = (net income + tax expense) / interest expense + 1  
 $\Rightarrow$  interest expense = (net income + tax expense) / (interest coverage ratio – 1)

Question 7.4: Other fixed charges

What are the firm's other fixed charges (besides interest expense)?

Answer 7.4: (229 + 25.44 – 56.54  $\times$  (4.7 – 1)) / (4.7 – 1) = 12.23

other fixed charges = fixed charges – interest expense

fixed charge coverage ratio = (net income + tax expense + fixed charges) / fixed charges  
 $\Rightarrow$  fixed charge coverage ratio = (net income + tax expense) / fixed charges + 1  
 $\Rightarrow$  fixed charges = (net income + tax expense) / (fixed charge coverage ratio – 1)  
 $\Rightarrow$  other fixed charges = (net income + tax expense) / (fixed charge coverage ratio – 1) – interest expense  
 $\Rightarrow$  other fixed charges = (net income + tax expense – interest expense  $\times$  (fixed charge coverage ratio – 1)) / (fixed charge coverage ratio – 1)

(Other fixed charges = (net income + tax expense – interest expense × (fixed charge coverage ratio – 1) ) / (fixed charge coverage ratio – 1) )