

EXAM FM QUESTIONS OF THE WEEK

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Question 11 - Week of October 3

A company wishes to issue a 20-year bond with annual coupons. The yield rate will be 8%. Find the coupon rate needed in order for the bond to have a duration of 10 years.

The solution can be found below.

Question 11 Solution

With annual coupon rate r and with face amount 1, the duration of the bond is

$$\frac{20v_{.08}^{20} + r(Ia)_{\overline{20}|.08}}{v_{.08}^{20} + r a_{\overline{20}|.08}} = \frac{4.290964 + 78.907938r}{.214548 + 9.818147r} .$$

Setting this equal to 10 and solving for r results in $r = .1113$.