Solution to January 22 homework

For the TIE ratio, we need EBIT and interest expense

Interest expense = 10% ($500,000) = $50,000

We do not have EBIT, but we can use profit margin and sales to get net income

\[
\text{Profit margin} = 0.05 = \frac{\text{Net income}}{\$2 \text{ million}} \quad \text{Net income} = \$100,000
\]

Operating profit (EBIT)
- interest expense

Taxable income (EBT)
- taxes (30%)

Net income \[\$100,000\]

We can use net income and the tax rate to get taxable income (EBT)

Net income = EBT – 30%(EBT)
$100,000 = 0.70 \text{ EBT} \quad \text{EBT} = \$142,857

Operating profit (EBIT)
- interest expense

Taxable income (EBT)
- taxes (30%)

Net income \[\$100,000\]

EBIT is equal to EBT + interest expense.....\$142,857 + $50,000

Operating profit (EBIT)
- interest expense

Taxable income (EBT)
- taxes (30%)

Net income \[\$100,000\]

We now have all of the information necessary to solve for TIE

\[
\text{TIE} = \frac{\text{EBIT}}{\text{Interest charges}} = \frac{\$192,857}{\$50,000} = 3.857x
\]