Reading: Feldblum.Surplus   (invested capital - 2018.Spring Q12) a-Question
Model: 2018.Spring #12
Problem Type: invested capital & PV(future income)

Given

From a company's CY annual statement:

statutory surplus	S	200
deferred tax assets	DTA	25
unearned premium reserve	UEP	150
undiscounted loss reserve	R	400

Other junk you need to solve the problem:

written premium (annual)	WP	300
pre-tax income (annual)	Inc:pre	50
cost of liquidation	CoL	30
cost of capital	% CoC	12%
tax rate	% tax	35%
pre-paid acquisition cost	% acq	25%
discount factor for loss reserves	% disc	80%

Find

(a) invested capital for given CY

(b) present value or PV(future income)

(c) would the shareholders prefer <u>liquidation</u> or <u>continued operation</u> of the company

(a)

invested capital	=	S + (% acq x UEP) + (1 - % disc) x R - DTA

invested capital = S
+ (% acq x UEP)
+ (1 - % disc) x R
- DTA

= 200
+ (25% x 150)
+ (1 - 80%) x 400
- 25

invested capital = 292.5   *<== answer to part (a)*

(b)

PV(future income)	=	(pre-tax income) x (1 - % tax) / (% CoC)

Pv(future income) = Inc:pre x (1 - % tax) / % CoC
= 50 x (1 - 35%) / 12%
Pv(future income) = 270.8   *<== answer to part (b)*

(c) **Decision Table:**

invested capital	>	PV(future income)	==>	liquidate
invested capital	<	PV(future income)	==>	continue operations
invested capital	=	PV(future income)	==>	doesn't matter *(maybe look at income trends?)*

For this problem we have:

invested capital	>	PV(future income)	==>	**liquidate**

<== answer to part (c)

Bonus Question

Assuming all but the indicated variable are fixed, what value of that variable would make the choice
between liquidation and continued operations irrelevant?

(i)   tax rate
(ii)   pre-tax income