

Session 14a: Post class test solutions

1. **d. \$19.44 million.** The NPV should be computed using the higher cost of capital. To compute the correct NPV, we first compute the after-tax cash flow each year.
 - After-tax cash flow = After-tax Operating Income + Depreciation = $\$12 + (100-20)/10 = \20 million
 - In year 10, you will have a salvage value of \$20 million
 - NPV = $-100 + 20$ (PV of annuity, 10 years, 12%) + $\$20/1.12^{10} = \19.44 m
2. **d. \$36.98 million.**

	Now	1	2	3	4	5
Investment	-\$50.00					
ATCF		\$4.00	\$4.40	\$4.84	\$5.32	\$5.86
Terminal value						\$99.56
PV @8%	-\$50.00	\$3.70	\$3.77	\$3.84	\$3.91	\$71.75
NPV	\$36.74					

Terminal value = $\$5.86 (1.02) / (.08-.02) = \99.56 million

3. **c. \$2.05 million**

ATCF	-\$50.00	\$8.00	\$8.80	\$9.68	\$10.65	\$11.71
Salvage value						\$20.00
PV @8%	-\$50.00	\$7.41	\$7.54	\$7.68	\$7.83	\$21.58
NPV	\$2.05					

4. **b. \$100 million.** The equity value of the acquirer (Revere) dropped by \$50 million on the announcement of the acquisition. The market, therefore, thinks that Revere paid \$50 million too much, when it acquired Luzo for \$100 million.
 - Market's estimate of Luzo's value = $\$150 \text{ m} - \$50 \text{ m} = \$100$ million
5. **False.** As you lengthen a project's life, you have to increase capital maintenance in the earlier years. This will result in lower cash flows, which can more than offset any benefit from a longer life (and a higher terminal value), at least for some projects.
6. **d. In your worst-case scenario, the project has a NPV of \$2 million.** The fact that your NPV is positive even in your worst-case scenario should comfort you, because even in its worst form, this project still creates value (just not as much as you thought it would). All of the other choices will make you even more uncomfortable about uncertainty.