

## Math 1160 – Section 10.4 Answer Key

1. Interest earned in a traditional IRA is tax **deferred**. You will pay taxes on the contributions and interest upon withdrawal of the funds from the traditional IRA.
2. Interest earned in a Roth IRA is tax **free**. You pay taxes on the contributions to a Roth IRA, but never pay taxes on the interest at withdrawal.
3.  $300,000 \times .55 = \$165,000$

If he pays taxes of 45% on the balance of dollars in his traditional IRA upon withdrawal, then he is left with 55% (.55) of the money after taxes.

4. For a Roth IRA, withdrawals are NOT taxed. He can withdraw all the money and not pay taxes on it. He receives \$300,000.

6. The Traditional IRA is more advantageous in this situation.

Example 1a:  $\$4000 \times .30 = \$1200$  taxes saved

Example 1b: \$65,575.49

$N = 48$

$I\% = 6$

$PV = -4000$

$PMT = 0$

$FV = ?$

Example 1c:  $\$65,575.49 \times .75 = \mathbf{\$49,181.62}$  (You have 75% left after taxes.)

Example 3a: None. Contributions to a Roth IRA will be taxed.

Example 3b: \$45,902.84

$N = 48$

$I\% = 6$

$PV = -2800$  (\$4000 – 30% taxes)

$PMT = 0$

$FV = ?$

Example 3c: You will not be taxed upon withdrawal, so you will receive the full **\$45,902.84**.

8. The Roth IRA is more advantageous in this situation.

Example 1a:  $\$4000 \times .30 = \$1200$  taxes saved

Example 1b:  $\$65,575.49$

$N = 48$

$I\% = 6$

$PV = -4000$

$PMT = 0$

$FV = ?$

Example 1c:  $\$65,575.49 \times .65 = \mathbf{\$42,624.07}$  (You have 65% left after taxes.)

Example 3a: None. Contributions to a Roth IRA will be taxed.

Example 3b:  $\$45,902.84$

$N = 48$

$I\% = 6$

$PV = -2800$  ( $\$4000 - 30\%$  Taxes)

$PMT = 0$

$FV = ?$

Example 3c: You will not be taxed upon withdrawal, so you will receive the full  $\mathbf{\$45,902.84}$ .