

## #1 - Calculate Assessment Level

If the effective tax rate is 1.8% and the tax rate is \$3.00 per \$100 of assessed value, what is the Assessment Level?

## #1 - Calculate Assessment Level Answer

(Slide #21)

If the effective tax rate is 1.8% and the tax rate is \$3.00 per \$100 of assessed value, what is the Assessment Level?

**Answer:**     **Formula:  $A = E / T$**

$$A = 1.8\% \text{ (or } .018) / (\$3.00 / \$100.00)$$

$$A = .018 / .03$$

$$A = .6 \text{ or } 60\%$$

## #2 - Calculate Effective Tax Rate

If the Tax Rate is \$1.85 per \$100 of assessed value and the Assessment Level is 35% what is the Effective Tax Rate?

## #2 - Calculate Effective Tax Rate

(Slide #20)

If the Tax Rate is \$1.85 per \$100 of assessed value and the Assessment Ratio is 35% what is the Effective Tax Rate?

**Answer:**     $T = \$1.85 / \$100$

$$T = .0185$$

$$E = T * A$$

$$E = .0185 * 35\%$$

$$E = .006475 \text{ or } .6475\%$$

### #3 - Calculating Personal Property Replacement Cost New (RCN)

Using the 15-year life table excerpt from the Personal Property Manual, calculate the Replacement Cost New (RCN) of business equipment purchased in 2014 for \$15,000.

#### FIFTEEN (15) YEAR LIFE

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#### NEVADA DEPARTMENT OF TAXATION

#### 15 YEAR LIFE

#### 200% DECLINING BALANCE

YEAR ACQUIRED	AGE	COST INDEX	PERCENT DEPRECIATION	PERCENT GOOD	CONVERSION FACTOR
2017	0	1.00	0.0	100.0	1.0000
2016	1	1.01	13.0	87.0	0.8787
2015	2	1.01	25.0	75.0	0.7575
2014	3	1.02	35.0	65.0	0.6630
2013	4	1.03	44.0	56.0	0.5768
2012	5	1.05	51.0	49.0	0.5145
2011	6	1.07	58.0	42.0	0.4494
2010	7	1.09	63.0	37.0	0.4033
2009	8	1.10	68.0	32.0	0.3520
2008	9	1.13	72.0	28.0	0.3164
2007	10	1.17	76.0	24.0	0.2808
2006	11	1.21	80.0	20.0	0.2420
2005	12	1.25	84.0	16.0	0.2000
2004	13	1.29	87.0	13.0	0.1677
2003	14	1.31	91.0	9.0	0.1179
2002	15	1.33	95.0	5.0	0.0665
Residual		1.33	95.0	5.0	0.0665

### #3 - Calculating Personal Property Replacement Cost New (RCN) Answer

(Slide #61)

Using the 15-year life table excerpt from the Personal Property Manual, calculate the Replacement Cost New (RCN) of business equipment purchased new in 2014 for \$15,000.

#### FIFTEEN (15) YEAR LIFE

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#### NEVADA DEPARTMENT OF TAXATION

#### 15 YEAR LIFE

#### 200% DECLINING BALANCE

YEAR ACQUIRED	AGE	COST INDEX	PERCENT DEPRECIATION	PERCENT GOOD	CONVERSION FACTOR
2017	0	1.00	0.0	100.0	1.0000
2016	1	1.01	13.0	87.0	0.8787
2015	2	1.01	25.0	75.0	0.7575
2014	3	1.02	35.0	65.0	0.6630
2013	4	1.03	44.0	56.0	0.5768
2012	5	1.05	51.0	49.0	0.5145
2011	6	1.07	58.0	42.0	0.4494
2010	7	1.09	63.0	37.0	0.4033
2009	8	1.10	68.0	32.0	0.3520
2008	9	1.13	72.0	28.0	0.3164
2007	10	1.17	76.0	24.0	0.2808
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2003	14	1.31	91.0	9.0	0.1179
2002	15	1.33	95.0	5.0	0.0665
Residual		1.33	95.0	5.0	0.0665

**Answer: Formula: RCN = Acquisition Cost \* Cost Index Factor**

$$\text{RCN} = \$15,000 * 1.02$$

$$\text{RCN} = \$15,300$$

#### #4 - Calculating Personal Property Replacement Cost New (RCN)

Using the 15-year life table excerpt from the Personal Property Manual, calculate the Replacement Cost New (RCN) of business equipment purchased new 3 years ago for \$15,000 and purchased July 1, 2017 by the current owner for \$12,000.

#### FIFTEEN (15) YEAR LIFE

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#### NEVADA DEPARTMENT OF TAXATION

#### 15 YEAR LIFE

#### 200% DECLINING BALANCE

YEAR ACQUIRED	AGE	COST INDEX	PERCENT DEPRECIATION	PERCENT GOOD	CONVERSION FACTOR
2017	0	1.00	0.0	100.0	1.0000
2016	1	1.01	13.0	87.0	0.8787
2015	2	1.01	25.0	75.0	0.7575
2014	3	1.02	35.0	65.0	0.6630
2013	4	1.03	44.0	56.0	0.5768
2012	5	1.05	51.0	49.0	0.5145
2011	6	1.07	58.0	42.0	0.4494
2010	7	1.09	63.0	37.0	0.4033
2009	8	1.10	68.0	32.0	0.3520
2008	9	1.13	72.0	28.0	0.3164
2007	10	1.17	76.0	24.0	0.2808
2006	11	1.21	80.0	20.0	0.2420
2005	12	1.25	84.0	16.0	0.2000
2004	13	1.29	87.0	13.0	0.1677
2003	14	1.31	91.0	9.0	0.1179
2002	15	1.33	95.0	5.0	0.0665
Residual		1.33	95.0	5.0	0.0665

#### #4 - Calculating Personal Property Replacement Cost New (RCN) Answer

(Slide #61)

Using the 15-year life table excerpt from the Personal Property Manual, calculate the Replacement Cost New (RCN) of business equipment purchased new 3 years ago for \$15,000 and purchased July 1, 2017 by the current owner for \$12,000.

#### FIFTEEN (15) YEAR LIFE

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#### NEVADA DEPARTMENT OF TAXATION

#### 15 YEAR LIFE

#### 200% DECLINING BALANCE

YEAR ACQUIRED	AGE	COST INDEX	PERCENT DEPRECIATION	PERCENT GOOD	CONVERSION FACTOR
2017	0	1.00	0.0	100.0	1.0000
2016	1	1.01	13.0	87.0	0.8787
2015	2	1.01	25.0	75.0	0.7575
2014	3	1.02	35.0	65.0	0.6630
2013	4	1.03	44.0	56.0	0.5768
2012	5	1.05	51.0	49.0	0.5145
2011	6	1.07	58.0	42.0	0.4494
2010	7	1.09	63.0	37.0	0.4033
2009	8	1.10	68.0	32.0	0.3520
2008	9	1.13	72.0	28.0	0.3164
2007	10	1.17	76.0	24.0	0.2808
2006	11	1.21	80.0	20.0	0.2420
2005	12	1.25	84.0	16.0	0.2000
2004	13	1.29	87.0	13.0	0.1677
2003	14	1.31	91.0	9.0	0.1179
2002	15	1.33	95.0	5.0	0.0665
Residual		1.33	95.0	5.0	0.0665

**Answer: Formula: RCN = Acquisition Cost \* Cost Index Factor**

$$\text{RCN} = \$12,000 * 1.00$$

$$\text{RCN} = \$12,000$$



## #5 - Calculating Personal Property Depreciation

Using the life table excerpt below, calculate the Depreciation of the following personal property:

A business declares equipment in the following amounts: \$5,000 three years ago, \$2,000 two years ago, and \$10,000 one year ago. Compute the depreciation (round to the nearest \$100).

Age	Cost Index	Percent Depreciation	Percent Good
0	1.00	0.0	100.0
1	1.01	13.0	87.0
2	1.01	25.0	75.0
3	1.02	35.0	65.0
4	1.03	44.0	56.0
5	1.05	51.0	49.0

## # 5 - Calculating Personal Property Depreciation Answer

(Slide #62)

Using the life table excerpt below, calculate the Depreciation of the following personal property:

A business declares equipment in the following amounts: \$5,000 three years ago, \$2,000 two years ago, and \$10,000 one year ago. Compute the depreciation (round to the nearest \$100).

Age	Cost Index	Percent Depreciation	Percent Good
0	1.00	0.0	100.0
1	1.01	13.0	87.0
2	1.01	25.0	75.0
3	1.02	35.0	65.0
4	1.03	44.0	56.0
5	1.05	51.0	49.0

**Answer:** Formula: Depreciation = Acquisition Cost \* Cost Index Factor \* (1-% Good)

$$\text{Depreciation} = \$5,000 * 1.02 * (1-.65)$$

$$\text{Depreciation} = \$1,785$$

$$\text{Depreciation} = \$2,000 * 1.01 * (1-.75)$$

$$\text{Depreciation} = \$505$$

$$\text{Depreciation} = \$10,000 * 1.01 * (1-.87)$$

$$\text{Depreciation} = \$1,313$$

$$\text{Total Depreciation} = \$1,785 + \$505 + \$1,313 = \$3,603$$

$$\text{Round to the nearest } \$100 = \$3,600$$

## #6 - Calculating Personal Property RCNLD (Taxable Value)

Using the life table excerpt below, calculate the RCNLD of the following personal property:

A business declares equipment in the following amounts: \$10,000 three years ago, \$5,000 two years ago, and \$3,000 one year ago. Compute the RCNLD or Taxable Value (round to the nearest \$10).

Age	Cost Index	Percent Depreciation	Percent Good
0	1.00	0.0	100.0
1	1.01	13.0	87.0
2	1.01	25.0	75.0
3	1.02	35.0	65.0
4	1.03	44.0	56.0
5	1.05	51.0	49.0

## #6 - Calculating Personal Property RCNLD (Taxable Value) Answer

(Slide #63)

Using the life table excerpt below, calculate the RCNLD of the following personal property:

A business declares equipment in the following amounts: \$10,000 three years ago, \$5,000 two years ago, and \$3,000 one year ago. Compute the RCNLD or Taxable Value (round to the nearest \$10).

Age	Cost Index	Percent Depreciation	Percent Good
0	1.00	0.0	100.0
1	1.01	13.0	87.0
2	1.01	25.0	75.0
3	1.02	35.0	65.0
4	1.03	44.0	56.0
5	1.05	51.0	49.0

**Answer:**

**Formula: RCNLD = RCN (Acquisition Cost \* Cost Index Factor) – Depreciation (RCN \* 1-% Good)**

$$\text{RCN} = \$10,000 * 1.02 = \$10,200$$

$$\text{Depreciation} = \$10,200 * (1-.65) = \$3,570$$

$$\text{RCNLD} = \$10,200 - \$3,570 = \$6,630$$

$$\text{RCN} = \$5,000 * 1.01 = \$5,050$$

$$\text{Depreciation} = \$5,050 * (1-.75) = \$1,262.50$$

$$\text{RCNLD} = \$5,050 - \$1,262.50 = \$3,787.50$$

$$\text{RCN} = \$3,000 * 1.01 = \$3,030$$

$$\text{Depreciation} = \$3,030 * (1-.87) = \$393.90$$

$$\text{RCNLD} = \$3,030 - \$393.90 = \$2,636.10$$

$$\text{Total RCNLD} = \$6,630 + 3,787.50 + 2,636.10 = \$13,053.60$$

$$\text{Round to the nearest } \$10 = \$13,050$$

## #7 - Calculating Personal Property Assessed Value

Using the life table excerpt below, calculate the assessed value of the following personal property:

A business declares equipment in the following amount: \$25,000 three years ago and the assessment ratio is 35%. Compute the Assessed Value (round to the nearest \$1).

<b>Age</b>	<b>Cost Index</b>	<b>Percent Depreciation</b>	<b>Percent Good</b>
0	1.00	0.0	100.0
1	1.01	13.0	87.0
2	1.01	25.0	75.0
3	1.02	35.0	65.0
4	1.03	44.0	56.0
5	1.05	51.0	49.0

## #7 - Calculating Personal Property Assessed Value Answer

(Slide #64)

Using the life table excerpt below, calculate the assessed value of the following personal property:

A business declares equipment in the following amount: \$25,000 three years ago and the assessment ratio is 35%. Compute the Assessed Value (round to the nearest \$1).

Age	Cost Index	Percent Depreciation	Percent Good
0	1.00	0.0	100.0
1	1.01	13.0	87.0
2	1.01	25.0	75.0
3	1.02	35.0	65.0
4	1.03	44.0	56.0
5	1.05	51.0	49.0

**Answer:**

**Formula: Assessed Value = RCNLD \* Assessment Ratio**

$$\text{RCN} = \$25,000 * 1.02 = \$25,500$$

$$\text{Depreciation} = \$25,500 * (1 - .65) = \$8,925$$

$$\text{RCNLD} = \$25,500 - \$8,925 = \$16,575$$

$$\text{Assessed Value} = \$16,575 * 35\% = \$5,801.25$$

$$\text{Round to the nearest } \$1 = \$5,801$$

## #8 - Calculating Personal Property Taxes Due

Using the life table excerpt below, calculate the property taxes due of the following personal property:

A beauty salon has equipment as follows: \$12,500 purchased 5 years ago. The assessment ratio is 35% and the tax rate is \$2.87 per \$100 assessed (round to the nearest \$1).

Age	Cost Index	Percent Depreciation	Percent Good
0	1.00	0.0	100.0
1	1.01	13.0	87.0
2	1.01	25.0	75.0
3	1.02	35.0	65.0
4	1.03	44.0	56.0
5	1.05	51.0	49.0

## #8 - Calculating Personal Property Taxes Due Answer

(Slide #65)

Using the life table excerpt below, calculate the property taxes due of the following personal property:

A beauty salon has equipment as follows: \$12,500 purchased 5 years ago. The assessment ratio is 35% and the tax rate is \$2.87 per \$100 assessed (round to the nearest \$1).

Age	Cost Index	Percent Depreciation	Percent Good
0	1.00	0.0	100.0
1	1.01	13.0	87.0
2	1.01	25.0	75.0
3	1.02	35.0	65.0
4	1.03	44.0	56.0
5	1.05	51.0	49.0

**Answer:**

**Formula: Taxes Due = Assessed Value \* Tax Rate**

$$\text{RCN} = \$12,500 * 1.05 = \$13,125$$

$$\text{Depreciation} = \$13,125 * (1 - .49) = \$6,693.75$$

$$\text{RCNLD} = \$13,125 - \$6,693.75 = \$6,431.25$$

$$\text{Assessed Value} = \$6,431.25 * 35\% = \$2,250.94$$

$$\text{Taxes Due} = \$2,250.94 * .0287 = \$64.60$$

$$\text{Round to the nearest \$1} = \$65$$



## #9 - Calculating Manufactured Home Replacement Cost New (RCN)

Using the life table excerpt below, calculate replacement cost new of a mobile home that sold in 2003 for \$54,000 (round to the nearest \$10).

NEVADA DEPARTMENT OF TAXATION 2006-2007 COST CONVERSION FACTORS MOBILE HOMES SOLD ON OR AFTER JULY 1, 1982 16-YEAR STRAIGHT LINE				
<b>Year First Sold</b>	<b>Age</b>	<b>Cost Index</b>	<b>Percent Depreciation</b>	<b>Percent Good</b>
2006	0	1.00	0.0	100.0
2005	1	1.00	5.0	95.0
2004	2	1.00	10.0	90.0
2003	3	1.08	15.0	85.0
2002	4	1.11	20.0	80.0
2001	5	1.16	25.0	75.0
2000	6	1.17	30.0	70.0
1999	7	1.18	35.0	65.0
1998	8	1.18	40.0	60.0
1997	9	1.19	45.0	55.0
1996	10	1.20	50.0	50.0

## #9 - Calculating Manufactured Home Replacement Cost New (RCN) Answer

(Slide #76)

Using the life table excerpt below, calculate replacement cost new of a mobile home that sold in 2003 for \$54,000 (round to the nearest \$10).

NEVADA DEPARTMENT OF TAXATION 2006-2007 COST CONVERSION FACTORS MOBILE HOMES SOLD ON OR AFTER JULY 1, 1982 16-YEAR STRAIGHT LINE				
Year First Sold	Age	Cost Index	Percent Depreciation	Percent Good
2006	0	1.00	0.0	100.0
2005	1	1.00	5.0	95.0
2004	2	1.00	10.0	90.0
2003	3	1.08	15.0	85.0
2002	4	1.11	20.0	80.0
2001	5	1.16	25.0	75.0
2000	6	1.17	30.0	70.0
1999	7	1.18	35.0	65.0
1998	8	1.18	40.0	60.0
1997	9	1.19	45.0	55.0
1996	10	1.20	50.0	50.0

**Answer: Formula: Acquisition Cost \* Cost Index = Replacement Cost New**

$$\text{\$54,000} * 1.08 = \text{\$58,320}$$

**Round to the nearest \$10 = \$58,320**

## #10 - Calculating Manufactured Home Depreciation

Using the life table excerpt below, calculate depreciation of a mobile home that sold in 1997 for \$142,000 (round to the nearest \$10).

NEVADA DEPARTMENT OF TAXATION 2006-2007 COST CONVERSION FACTORS MOBILE HOMES SOLD ON OR AFTER JULY 1, 1982 16-YEAR STRAIGHT LINE				
<b>Year First Sold</b>	<b>Age</b>	<b>Cost Index</b>	<b>Percent Depreciation</b>	<b>Percent Good</b>
2006	0	1.00	0.0	100.0
2005	1	1.00	5.0	95.0
2004	2	1.00	10.0	90.0
2003	3	1.08	15.0	85.0
2002	4	1.11	20.0	80.0
2001	5	1.16	25.0	75.0
2000	6	1.17	30.0	70.0
1999	7	1.18	35.0	65.0
1998	8	1.18	40.0	60.0
1997	9	1.19	45.0	55.0
1996	10	1.20	50.0	50.0

## #10 - Calculating Manufactured Home Depreciation Answer

(Slide #77)

Using the life table excerpt below, calculate depreciation of a mobile home that sold in 1997 for \$142,000 (round to the nearest \$10).

NEVADA DEPARTMENT OF TAXATION 2006-2007 COST CONVERSION FACTORS MOBILE HOMES SOLD ON OR AFTER JULY 1, 1982 16-YEAR STRAIGHT LINE				
Year First Sold	Age	Cost Index	Percent Depreciation	Percent Good
2006	0	1.00	0.0	100.0
2005	1	1.00	5.0	95.0
2004	2	1.00	10.0	90.0
2003	3	1.08	15.0	85.0
2002	4	1.11	20.0	80.0
2001	5	1.16	25.0	75.0
2000	6	1.17	30.0	70.0
1999	7	1.18	35.0	65.0
1998	8	1.18	40.0	60.0
1997	9	1.19	45.0	55.0
1996	10	1.20	50.0	50.0

**Answer:**

**Formula: Depreciation = RCN \* (1-% Good)**

$$\text{RCN} = \$142,000 * 1.19 = \$168,980$$

$$\text{Depreciation} = \$168,980 * (1-.55) = \$76,041$$

$$\text{Round to the nearest } \$10 = \$76,040$$

## #11 - Calculating Manufactured Home RCNLD or Taxable Value

Using the life table excerpt below, calculate RCNLD (Taxable Value) of a mobile home that sold in 2001 for \$98,500 (round to the nearest \$100).

NEVADA DEPARTMENT OF TAXATION 2006-2007 COST CONVERSION FACTORS MOBILE HOMES SOLD ON OR AFTER JULY 1, 1982 16-YEAR STRAIGHT LINE				
Year First Sold	Age	Cost Index	Percent Depreciation	Percent Good
2006	0	1.00	0.0	100.0
2005	1	1.00	5.0	95.0
2004	2	1.00	10.0	90.0
2003	3	1.08	15.0	85.0
2002	4	1.11	20.0	80.0
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2000	6	1.17	30.0	70.0
1999	7	1.18	35.0	65.0
1998	8	1.18	40.0	60.0
1997	9	1.19	45.0	55.0
1996	10	1.20	50.0	50.0

## #11 - Calculating Manufactured Home RCNLD or Taxable Value Answer

(Slide #78)

Using the life table excerpt below, calculate RCNLD or Taxable Value of a mobile home that sold in 2001 for \$98,500 (round to the nearest \$100).

NEVADA DEPARTMENT OF TAXATION 2006-2007 COST CONVERSION FACTORS MOBILE HOMES SOLD ON OR AFTER JULY 1, 1982 16-YEAR STRAIGHT LINE				
Year First Sold	Age	Cost Index	Percent Depreciation	Percent Good
2006	0	1.00	0.0	100.0
2005	1	1.00	5.0	95.0
2004	2	1.00	10.0	90.0
2003	3	1.08	15.0	85.0
2002	4	1.11	20.0	80.0
2001	5	1.16	25.0	75.0
2000	6	1.17	30.0	70.0
1999	7	1.18	35.0	65.0
1998	8	1.18	40.0	60.0
1997	9	1.19	45.0	55.0
1996	10	1.20	50.0	50.0

**Answer:**

**Formula: RCNLD = RCN - Depreciation**

$$\text{RCN} = \$98,500 * 1.16 = \$114,260$$

$$\text{Depreciation} = \$114,260 * (1-.75) = \$28,565$$

$$\text{RCNLD} = \$114,260 - \$28,565 = \$85,695$$

$$\text{Round to the nearest } \$100 = \$85,700$$

## #12 - Calculating Manufactured Home Assessed Value

Using the life table excerpt below, calculate assessed value of a mobile home that sold in 2002 for \$110,000 and an assessment ratio of 35% (round to the nearest \$100).

NEVADA DEPARTMENT OF TAXATION 2006-2007 COST CONVERSION FACTORS MOBILE HOMES SOLD ON OR AFTER JULY 1, 1982 16-YEAR STRAIGHT LINE				
<b>Year First Sold</b>	<b>Age</b>	<b>Cost Index</b>	<b>Percent Depreciation</b>	<b>Percent Good</b>
2006	0	1.00	0.0	100.0
2005	1	1.00	5.0	95.0
2004	2	1.00	10.0	90.0
2003	3	1.08	15.0	85.0
2002	4	1.11	20.0	80.0
2001	5	1.16	25.0	75.0
2000	6	1.17	30.0	70.0
1999	7	1.18	35.0	65.0
1998	8	1.18	40.0	60.0
1997	9	1.19	45.0	55.0
1996	10	1.20	50.0	50.0

## #12 - Calculating Manufactured Home Assessed Value Answer

(Slide #79)

Using the life table excerpt below, calculate assessed value of a mobile home that sold in 2002 for \$110,000 and an assessment ratio of 35% (round to the nearest \$100).

NEVADA DEPARTMENT OF TAXATION 2006-2007 COST CONVERSION FACTORS MOBILE HOMES SOLD ON OR AFTER JULY 1, 1982 16-YEAR STRAIGHT LINE				
Year First Sold	Age	Cost Index	Percent Depreciation	Percent Good
2006	0	1.00	0.0	100.0
2005	1	1.00	5.0	95.0
2004	2	1.00	10.0	90.0
2003	3	1.08	15.0	85.0
2002	4	1.11	20.0	80.0
2001	5	1.16	25.0	75.0
2000	6	1.17	30.0	70.0
1999	7	1.18	35.0	65.0
1998	8	1.18	40.0	60.0
1997	9	1.19	45.0	55.0
1996	10	1.20	50.0	50.0

**Answer:**

**Formula: Assessed Value = RCNLD \* Assessment Ratio**

$$\text{RCN} = \$110,000 * 1.11 = \$122,100$$

$$\text{Depreciation} = \$122,100 * (1-.80) = \$24,420$$

$$\text{RCNLD} = \$122,100 - 24,420 = \$97,680$$

$$\text{Assessed Value} = \$97,680 * 35\% = \$34,188$$

$$\text{Round to the nearest } \$100 = \$34,200$$



### #13 - Calculating Manufactured Home Taxes Due

Using the life table excerpt below, calculate the taxes due of a mobile home that sold in 2006 for \$155,000, an assessment ratio of 35% and a tax rate of \$2.85 per \$100 assessed (round to the nearest \$1).

NEVADA DEPARTMENT OF TAXATION 2006-2007 COST CONVERSION FACTORS MOBILE HOMES SOLD ON OR AFTER JULY 1, 1982 16-YEAR STRAIGHT LINE				
<b>Year First Sold</b>	<b>Age</b>	<b>Cost Index</b>	<b>Percent Depreciation</b>	<b>Percent Good</b>
2006	0	1.00	0.0	100.0
2005	1	1.00	5.0	95.0
2004	2	1.00	10.0	90.0
2003	3	1.08	15.0	85.0
2002	4	1.11	20.0	80.0
2001	5	1.16	25.0	75.0
2000	6	1.17	30.0	70.0
1999	7	1.18	35.0	65.0
1998	8	1.18	40.0	60.0
1997	9	1.19	45.0	55.0
1996	10	1.20	50.0	50.0

### #13 - Calculating Manufactured Home Taxes Due Answer

(Slide #80)

Using the life table excerpt below, calculate the taxes due of a mobile home that sold in 2006 for \$155,000, an assessment ratio of 35% and a tax rate of \$2.85 per \$100 assessed (round to the nearest \$1).

NEVADA DEPARTMENT OF TAXATION 2006-2007 COST CONVERSION FACTORS MOBILE HOMES SOLD ON OR AFTER JULY 1, 1982 16-YEAR STRAIGHT LINE				
Year First Sold	Age	Cost Index	Percent Depreciation	Percent Good
2006	0	1.00	0.0	100.0
2005	1	1.00	5.0	95.0
2004	2	1.00	10.0	90.0
2003	3	1.08	15.0	85.0
2002	4	1.11	20.0	80.0
2001	5	1.16	25.0	75.0
2000	6	1.17	30.0	70.0
1999	7	1.18	35.0	65.0
1998	8	1.18	40.0	60.0
1997	9	1.19	45.0	55.0
1996	10	1.20	50.0	50.0

**Answer:**

**Formula: Taxes Due = Assessed Value \* Tax Rate**

$$\text{RCN} = \$155,000 * 1.00 = \$155,000$$

$$\text{Depreciation} = \$155,000 * (0) = \$0$$

$$\text{RCNLD} = \$155,000 - \$0 = \$155,000$$

$$\text{Assessed Value} = \$155,000 * 35\% = \$54,250$$

$$\text{Taxes Due} = \$54,250 * (2.85/100) = \$1,546.13$$

$$\text{Round to the nearest \$1} = \$1,546$$

## #14 - Calculating Migratory Property

Using the life table excerpt below, calculate the taxes due of migratory property that entered the county on November 1<sup>st</sup> and will not remain for the full year. The acquisition cost is \$17,500 4 years ago; the assessment rate is 35% and the tax rate is \$3.15 per \$100 assessed value (round to the nearest \$1).

Age	Cost Index	Percent Depreciation	Percent Good
0	1.00	0.0	100.0
1	1.01	13.0	87.0
2	1.01	25.0	75.0
3	1.02	35.0	65.0
4	1.03	44.0	56.0
5	1.05	51.0	49.0

## #14 - Calculating Migratory Property Answer

(Slide #87)

Using the life table excerpt below, calculate the taxes due of migratory property that entered the county on November 1<sup>st</sup> and will not remain for the full year. The acquisition cost is \$17,500 4 years ago; the assessment rate is 35% and the tax rate is \$3.15 per \$100 assessed value (round to the nearest \$1).

Age	Cost Index	Percent Depreciation	Percent Good
0	1.00	0.0	100.0
1	1.01	13.0	87.0
2	1.01	25.0	75.0
3	1.02	35.0	65.0
4	1.03	44.0	56.0
5	1.05	51.0	49.0

**Answer:**

**Formula:** Fractional Reduction = July 1 – November 1 = 4/12

$$\text{RCN} = \$17,500 * 1.03 = \$18,025$$

$$\text{Fractional RCN} = \$18,025 * 4/12 = \$6,008.33$$

$$\text{Deduct Fractional RCN from RCN} = \$18,025 - \$6,008.33 = \$12,016.67$$

$$\text{Depreciation} = \$12,016.67 - (1-.56) = \$5,287.34$$

$$\text{RCNLD} = \$12,016.67 - \$5,287.34 = \$6,729.34$$

$$\text{Assessed Value} = \$6,729.34 * 35\% = \$2,355.27$$

$$\text{Taxes Due} = \$2,355.27 * (3.15/100) = \$74.19$$

$$\text{Round to the nearest \$1} = \$74$$

## #16 - Calculate Number of Acres From Legal Description

The S  $\frac{1}{2}$  of the NE  $\frac{1}{4}$  of NE  $\frac{1}{4}$  contains how many acres?

**#16 - Calculate Number of Acres From Legal Description Answer**

**(Slide #135)**

The S  $\frac{1}{2}$  of the NE  $\frac{1}{4}$  of NE  $\frac{1}{4}$  contains how many acres?

**Answer:  $\frac{1}{2} * \frac{1}{4} * \frac{1}{4} = \frac{1}{32} * 640 \text{ ac} = 20 \text{ ac}$**

**OR**

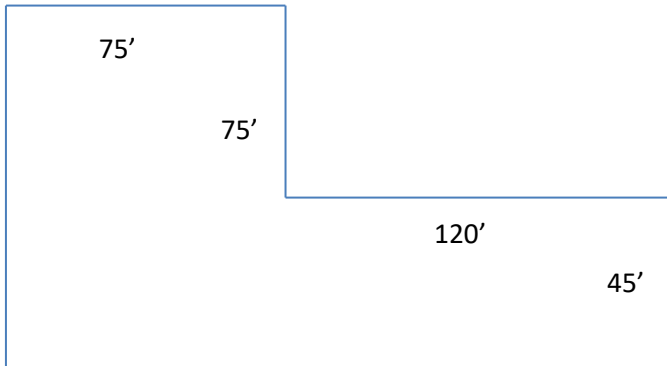
**$\frac{1}{2}$  of 640 = 320 ac**

**$\frac{1}{4}$  of 320 ac = 80 ac**

**$\frac{1}{4}$  of 80 ac = 20 ac**

### #17 - Calculating Land Value Using Square Foot Method

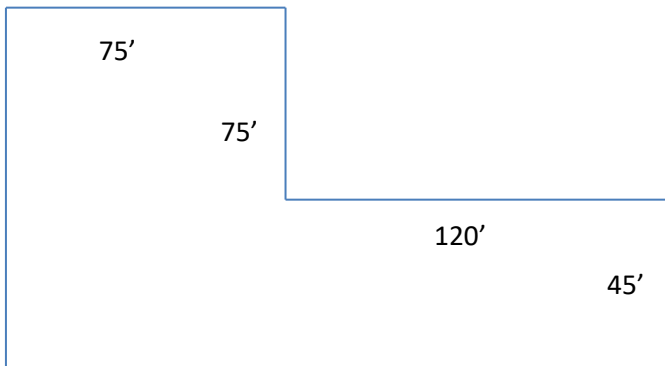
Find the taxable Value of this parcel using a comparable sale average price of \$25.00 per square foot.



## #17 - Calculating Land Value Using Square Foot Method Answer

(Slide #165)

Find the taxable Value of this parcel using a comparable sale average price of \$25.00 per square foot.



**Answer:**

**Calculate the left side of the square:**

$$(75' + 45') * 75' = 9000 \text{ sf}$$

**Calculate the rectangle**

$$45' * 120' = 5,400 \text{ sf}$$

**Calculate the total area of the parcel**

$$9,000 + 5,400 = 14,400 \text{ sf}$$

**Multiply the total area by the price per square foot**

$$14,400 \text{ sf} * \$25 = \$360,000$$



### #18 - Calculating Land Value Using Cost Per Acre

The subject lot is 1,280' x 3,500'. If the value is \$25,000 per acre, what is the value of the subject (round to the nearest \$100)?

## #18 - Calculating Land Value Using Cost Per Acre Answer

(Slide #166)

The subject lot is 1,280' x 3,500'. If the value is \$25,000 per acre, what is the value of the subject (round to the nearest \$100)?

**Answer:**     **Hint: 43,560 sf in an acre**

**Calculate the area in sf**

$$1280 * 3500 = 4,480,000$$

**Calculate acres**

$$4,480,000 / 43,560 = 102.846648301194 \text{ acres}$$

**Round to two decimal places**

$$102.85 \text{ acres}$$

**Calculate the value of the subject parcel**

$$102.85 \text{ acres} * \$25,000 = \$2,571,250$$

**Round to the nearest \$100 = \$2,571,300**

### #19 - Calculating Land Value Using Front Foot

The subject lot is a  $\frac{1}{2}$  acre vacant commercial lot with frontage on Reno Highway. If the lot is 360' in depth, what is the frontage. If the value per front foot is \$27,000, what is the value of the lot on a front foot basis?

## #19 - Calculating Land Value Using Front Foot Answer

(Slide #167)

The subject lot is a ½ acre vacant commercial lot with frontage on Reno Highway. If the lot is 360' in depth, what is the frontage. If the value per front foot is \$27,000, what is the value of the lot on a front foot basis?

**Answer:**     **Hint: 43,560 sf in an acre**

**Calculate the frontage**

$$43,560 / 2 = 21,780$$

$$21,780 / 360 = 60.5 \text{ front foot}$$

**Calculate the value**

$$60.5 \text{ front foot} * \$27,000 = \$1,633,500$$

## #20 - Calculating Land Value Using Front Foot

Assume an owner wants to sell a rectangular parcel that is 6 acres with 300 linear feet of lake front footage. How deep is the lot? If the per front value is \$55,000, what is the value?

## #20 - Calculating Land Value Using Front Foot Answer

(Slide #168)

Assume an owner wants to sell a rectangular parcel that is 6 acres with 300 linear feet of lake front footage. How deep is the lot? If the per front value is \$55,000, what is the value?

**Answer:**     **Hint: 43,560 sf in an acre**

**Calculate the total square feet of the lot**

$$43,560 * 6 \text{ acres} = 261,360 \text{ sf}$$

**Calculate the lot depth**

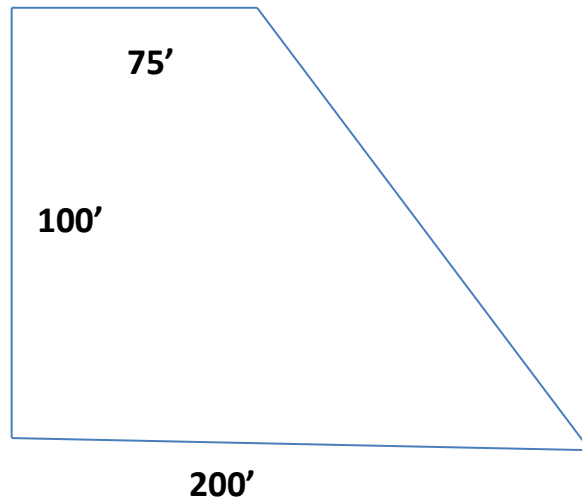
$$261,360 / 300 = 871.2'$$

**Calculate the value**

$$300' \text{ front footage} * \$55,000 = \$16,500,000$$

### #21 - Calculating Land Value Using 65%-35% Rule

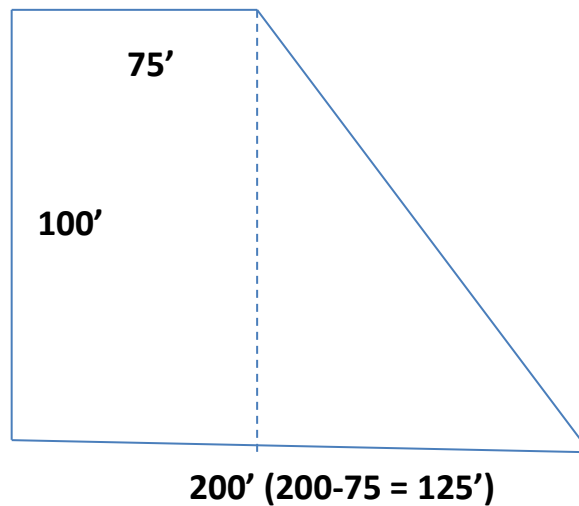
Calculate the value of the property if the frontage is 200' and the front foot value is \$150 using the 65%/35% rule (round to the nearest \$10).



## #21 - Calculating Land Value Using 65%-35% Rule Answer

(Slide #169)

Calculate the value of the property if the frontage is 200' and the front foot value is \$150 using the 65%/35% rule (round to the nearest \$10).



**Answer:** Calculate the Rectangle:

$$75' * \$150 = \$11,250.00$$

Calculate the Triangle:

$$(200-75 = 125') * \$150 * 65\% = \$12,187.50$$

Add the Values:

$$\$11,250 + \$12,187.50 = \$23,437.50$$

Round to the nearest \$10 = \$23,440



## #22 - Calculate Subject Property Value Using Sales Comparison

You are appraising a building site within an established single-family subdivision. You have found three recent comparable sales and have organized them into a market data grid. What is the value of the subject property?

The following adjustments are applicable:

- A rectangular site sells for \$2,500 more than an irregular site
- A site with a good view sells for \$2,500 more than a site with an average view.
- A site with good topography sells for \$1,500 more than a site with average topography.

Element	Subject	Sale 1	Adjustment	Sale 2	Adjustment	Sale 3	Adjustment
Sales Price		\$25,000		\$18,500		\$21,300	
Shape	Rectangular	Rectangular		Irregular		Rectangular	
View	Average	Good		Good		Good	
Topography	Average	Average		Average		Good	
Totals							

## #22 - Calculate Subject Property Value Using Sales Comparison Answer

(Slide #177)

You are appraising a building site within an established single-family subdivision. You have found three recent comparable sales and have organized them into a market data grid. What is the value of the subject property?

The following adjustments are applicable:

- A rectangular site sells for \$2,500 more than an irregular site
- A site with a good view sells for \$2,500 more than a site with an average view.
- A site with good topography sells for \$1,500 more than a site with average topography.

Element	Subject	Sale 1	Adjustment	Sale 2	Adjustment	Sale 3	Adjustment
Sales Price		\$25,000		\$18,500		\$21,300	
Shape	Rectangular	Rectangular		Irregular		Rectangular	
View	Average	Good		Good		Good	
Topography	Average	Average		Average		Good	
Totals							

Adjust for shape: +\$2,500 for irregular

Adjust for view: -\$2,500 for good

Adjust for topography: -\$1,500 for good

Element	Subject	Sale 1	Adjustment	Sale 2	Adjustment	Sale 3	Adjustment
Sales Price	<b>\$22,500</b>	\$25,000		\$18,500		\$21,300	
Shape	Rectangular	Rectangular	<b>\$0</b>	Irregular	<b>+\$2,500</b>	Rectangular	<b>\$0</b>
View	Average	Good	<b>(\$2,500)</b>	Good	<b>(\$2,500)</b>	Good	<b>(\$2,500)</b>
Topography	Average	Average	<b>\$0</b>	Average	<b>\$0</b>	Good	<b>(\$1,500)</b>
Totals			<b>\$25,000-\$0-\$2,500-\$0 = \$22,500</b>		<b>\$18,500+\$2,500-\$2,500-\$0 = \$18,500</b>		<b>\$21,300-\$0-\$2,500-\$1,500 = \$17,300</b>

### #23 - Value Property Using Abstraction

The subject property sold for \$59,500 and the improvement value is \$24,250. Determine the land value using the abstraction method.

### #23 - Value Property Using Abstraction Answer

(Slide #178)

The subject property sold for \$59,500 and the improvement value is \$24,250. Determine the land value using the abstraction method.

**Answer:     \$59,500 - \$24,250 = \$35,250**

## #24 - Value Property Using Abstraction

Using abstraction, find the best base lot value:

	<b>Sales Price</b>	<b>Improvement Value</b>	<b>Land Value</b>
Sale 1	\$175,000	\$95,000	
Sale 2	\$137,000	\$79,000	
Sale 3	\$210,000	\$113,500	
Sale 4	\$182,500	\$108,000	

## #24 - Value Property Using Abstraction Answer

(Slide #179)

Using abstraction, find the best base lot value:

	Sales Price	Improvement Value	Land Value
Sale 1	\$175,000	\$95,000	$\$175,000 - \$95,000 = \$80,000$
Sale 2	\$137,000	\$79,000	$\$137,000 - \$79,000 = \$58,000$
Sale 3	\$210,000	\$113,500	$\$210,000 - \$113,500 = \$96,500$
Sale 4	\$182,500	\$108,000	$\$182,500 - \$108,000 = \$74,500$
		Average	$\$80,000 + \$58,000 + \$96,500 + \$74,500 = \$309,000 / 4 = \$77,250$
		Base Lot Value	$\$77,250$

**Step 1: Calculate the Land Value (Sales Price – Improvement Value)**

**Step 2: Average the land values for the best base lot indicator**

## #25 - Value Property Using the Allocation Method

The subject property has a land to building ratio of 1:4 and sold for \$193,000. Determine the land value using the allocation method.

## #25 - Value Property Using the Allocation Method Answer

(Slide #180)

The subject property has a land to building ratio of 1:4 and sold for \$193,000. Determine the land value using the allocation method.

**Answer: 1 part land, 4 parts building = 5 parts**

$$\mathbf{\$193,000 / 5 = \$38,600}$$



### #26 - Value Property Using the Allocation Method

Using the allocation method, what is the indicated land value for the subject property (round to the nearest \$100)?

<b>Sale</b>	<b>Sale Price</b>	<b>Vacant Lot Price</b>	<b>Allocation</b>	
Subject	\$273,000			
Sale 1	\$233,500	\$120,000		
Sale 2	\$250,000	\$170,000		
Sale 3	\$225,000	\$99,500		
Sale 4	\$210,000	\$95,000		

## #26 - Value Property Using the Allocation Method Answer

(Slide #181)

Using the allocation method, what is the indicated land value for the subject property (round to the nearest \$100)?

**Hint: Rate (R) = Value (V) / Sale Price (I)**

Sale	Sale Price	Vacant Lot Price	Allocation	
Subject	\$273,000			<b>\$273,000 * .52213 = \$142,541.50</b>
Sale 1	\$233,500	\$120,000	<b>\$120,000 / \$233,500 = .51392</b>	
Sale 2	\$250,000	\$170,000	<b>170,000 / \$250,000 = .68000</b>	
Sale 3	\$225,000	\$99,500	<b>\$99,500 / \$225,000 = .44222</b>	
Sale 4	\$210,000	\$95,000	<b>\$95,000 / \$210,000 = .45238</b>	
			<b>Average</b>	<b>(.51392+.68000+.44222+.45238) / 4 = .52213</b>

**Step 1: Calculate the allocation percentage (Lot Price / Sale Price)**

**Step 2: Average the allocation percentage**

**Step 3: Multiply the allocation average by the subject sale price**

**Step 4: Round to the nearest \$100**

$$\text{\$142,541.50} = \text{\$142,500}$$

### **#27 - Value Property Using Capitalization of Ground Rent**

A vacant parcel is rented for \$9,500 / year on a net lease having 15 years to run. 6% is considered a fair return. What is the capitalized value of the land (round to the nearest \$1)?

## #27 - Value Property Using Capitalization of Ground Rent Answer

(Slide #182)

A vacant parcel is rented for \$9,500 / year on a net lease having 15 years to run. 6% is considered a fair return. What is the capitalized value of the land (round to the nearest \$1)?

**Answer:**     **Hint:  $\text{Income (I)} = \text{Value (V)} / \text{Rate (R)}$**

$$\mathbf{\$9,500 / 6\% = \$158,333.30}$$

**Round to the nearest \$1 = \$158,333**

### #28 - Value Property Using the Land Residential Technique

The Net Operating Income of the property is \$55,000. The income attributable to the building is \$35,000. If the land capitalization rate is 6%, what is the value of the land (round to the nearest \$10)?

## #28 - Value Property Using the Land Residential Technique Answer

(Slide #186)

The Net Operating Income of the property is **\$55,000**. The income attributable to the building is **\$35,000**. If the land capitalization rate is **6%**, what is the value of the land (round to the nearest \$10)?

**Answer:** IRV likes BLTs

	I	R	V
<b>B</b>	<b>\$35,000</b>		
<b>L</b>	<b>\$20,000</b>	<b>6%</b>	<b>\$333,333.33</b>
<b>T</b>	<b>\$55,000</b>		

**Step 1: Calculate the income associated with the land (\$55,000 - \$35,000)**

**Step 2: Find the value of the land ( $V = I / R$ )**

**Step 3: Round to the nearest \$10**

$$\$333,333.33 = \$333,330$$

### #29 - More IRV likes BLTs

You are given the following information:

Building Value = \$2,500,000

Building Rate = .15

Land Rate = .10

Total Income = \$395,000

Complete the rest of the grid.

	<b>I</b>	<b>R</b>	<b>V</b>
<b>B</b>		.15	\$2,500,000
<b>L</b>		.10	
<b>T</b>	\$395,000		

## #29 - More IRV likes BLTs Answer

(Slide #187)

You are given the following information:

Building Value = \$2,500,000

Building Rate = .15

Land Rate = .10

Total Income = \$395,000

Complete the rest of the grid.

	I	R	V
B	\$375,000	.15	\$2,500,000
L	\$20,000	.10	\$ 200,000
T	\$395,000		\$2,700,000

**Step 1: Calculate building income ( $R * V = I$ ) ( $.15 * \$2,500,000$ )**

**Step 2: Calculate land income ( $T - B = L$ ) ( $\$395,000 - \$375,000$ )**

**Step 3: Calculate Land Value ( $V = I / R$ ) ( $\$20,000 / .10$ )**

**Step 4: Calculate Total Value ( $B + L = T$ ) ( $\$2,500,000 + \$200,000$ )**



### **#30 - Value Open Space Property**

The subject property is a registered historical building on a two-acre site and it qualifies as open-space.

The full-cash value of comparable land nearby, which is not open space, equals \$75,000 per acre.

The taxable value (RCNLD) of the subject improvements equals \$63,000.

Calculate the assessed value of this property.

### #30 - Value Open Space Property Answer

(Slide #200)

The subject property is a registered historical building on a two-acre site and it qualifies as open-space.

The full-cash value of comparable land nearby, which is not open space, equals \$75,000 per acre.

The taxable value (RCNLD) of the subject improvements equals \$63,000.

Calculate the assessed value of this property.

#### **Answer:**

##### **Calculate the assessed value of the open-space land**

$$\$75,000 * 2 \text{ acres} = \$150,000 * .74 \text{ (discount factor)} = \$111,000 * 35\% = \$38,850$$

##### **Calculate the assessed value of the historical improvements**

$$\$63,000 * .74 \text{ (discount factor)} = \$46,620 * 35\% = \$16,317$$

##### **Add land and improvements for property value**

$$\$38,850 + \$16,317 = \$55,167$$

### #31 - Value Open Space Property

You are appraising a 125-year old historical residential property with an RCN of \$135,000 for the improvements and a \$23,000 full-cash value for the land. The property qualifies for open-space deferment with a discount factor of .74. The assessment ratio is 35%. What is the total assessed value (round to the nearest \$1)?

## #31 - Value Open Space Property Answer

(Slide #201)

You are appraising a 125-year old historical residential property with an RCN of \$135,000 for the improvements and a \$23,000 full-cash value for the land. The property qualifies for open-space deferment with a discount factor of .74. The assessment ratio is 35%. What is the total assessed value (round to the nearest \$1)?

**Answer:**

**Calculate the depreciated value of the improvements (hint: the property is historic so the residual value or percent good is 25%)**

$$\text{\$135,000} * .25 = \text{\$33,750}$$

**Add the land value**

$$\text{\$33,750} + \text{\$23,000} = \text{\$56,750}$$

**Apply the open-space factor of .74**

$$\text{\$56,750} * .74 = \text{\$41,995}$$

**Find the assessed value at a rate of 35%**

$$\text{\$41,995} * 35\% = \text{\$14,698.25}$$

**Round to the nearest \$1**

$$\text{\$14,698.25} = \text{\$14,698}$$

### #32 – Calculating Adjusted Actual Age

The subject property is a single-family home built in 2002 with an addition, comparable in quality, built in 2013? What is the adjusted actual age of the improvements (round to the nearest whole number)?



## #32 – Calculating Adjusted Actual Age Answer

(Slide #217)

The subject property is a single-family home built in 2002 with an addition, comparable in quality, built in 2013? What is the adjusted actual age of the improvements (round to the nearest whole number)?

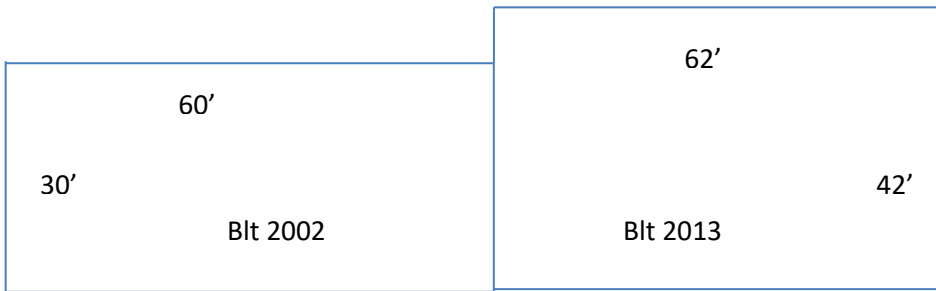


**Answer:**

	Size	Sq Ft	Math	Percent	Yr Blt	Math	Date
<b>Original</b>	<b>30x60</b>	<b>1800</b>	<b>1800/4404</b>	<b>41%</b>	<b>2002</b>	<b>2002*41%</b>	<b>818.256</b>
<b>Addition</b>	<b>42x62</b>	<b>2604</b>	<b>2604/4404</b>	<b>59%</b>	<b>2013</b>	<b>2013*59%</b>	<b>1190.248</b>
<b>Total</b>		<b>4404</b>					<b>2008.504</b> <b>Or 2009</b> <b>(rounded)</b>

### #33 – Calculating Per Square Foot Cost

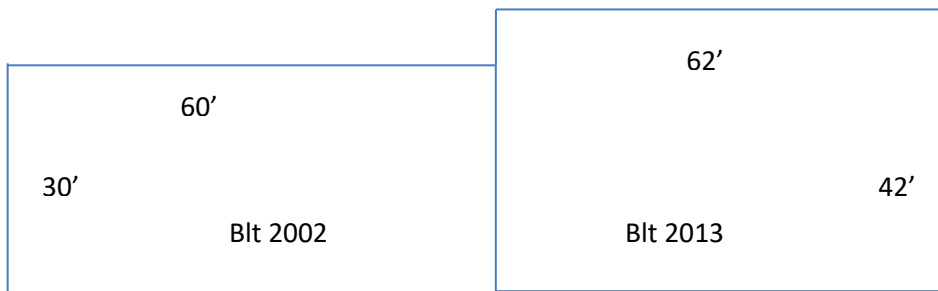
Calculate the square footage using the following drawing. What is the per square foot cost if the RCN is \$172,335?



### #33 – Calculating Per Square Foot Cost Answer

(Slide #218)

Calculate the square footage using the following drawing. What is the per square foot cost if the RCN is \$172,335?



**Answer:**

$$(30 * 60) + (42 * 62) =$$

$$1,800 + 2,604 = 4,404 \text{ sq ft}$$

$$\$172,335 / 4,404 \text{ sq ft} = \$39.13 / \text{sq ft}$$



### #34 – Calculate Using Per Square Foot Cost

Calculate the RCN of a good quality 2,700 sq ft house using the Marshall/Swift tables provided.



One Story		One & One Half Story		Two Story	
sq ft	\$ per sq ft	sq ft	\$ per sq ft	sq ft	\$ per sq ft
2,600	\$ 102.00	2,600	\$ 91.00	2,600	\$ 94.00
2,800	\$ 101.00	2,800	\$ 89.50	2,800	\$ 92.50
3,000	\$ 99.50	3,000	\$ 88.50	3,000	\$ 91.00
		CCM	1.05		
		LCM	1.09		

### #34 – Calculate Using Per Square Foot Cost Answer

(Slide #219)

Calculate the RCN of a good quality 2,700 sq ft house using the Marshall/Swift tables provided.



One Story		One & One Half Story		Two Story	
sq ft	\$ per sq ft	sq ft	\$ per sq ft	sq ft	\$ per sq ft
2,600	\$ 102.00	2,600	\$ 91.00	2,600	\$ 94.00
2,800	\$ 101.00	2,800	\$ 89.50	2,800	\$ 92.50
3,000	\$ 99.50	3,000	\$ 88.50	3,000	\$ 91.00
		CCM	1.05		
		LCM	1.09		

**Answer:**

**Interpolate the cost:**

**Step 1: Set up the grid for interpolation**

	Sq Ft	Math	Percent	Cost	Math	Int. Cost
<b>High</b>		sq ft/total sq ft			Cost * Percent	
<b>Low</b>		sq ft/total sq ft			Cost * Percent	
					2700 sq ft	

**Step 2: Put in the Information and do the math**

	Sq Ft	Math	Percent	Cost	Math	Int. Cost
<b>High</b>	2800	sq ft/total sq ft $2800/5400 =$	52%	89.50	Cost * Percent $89.50 * 52% =$	46.41
<b>Low</b>	2600	sq ft/total sq ft $2600/5400 =$	48%	91.00	Cost * Percent $91.00 * 48% =$	43.81
	5400				2700 sq ft	90.22
					$2700 * 90.22 =$	243,600
					*LM * CM = $*1.05 * 1.09$	278,800

### #35 – Calculate Using the Factored Historical Method

A single-family residence was built 15 years ago for \$73,000. The cost index when it was built was 1.02. The current cost index is 1.10. What is the RCN?

### #35 – Calculate Using the Factored Historical Method Answer

(Slide #220)

A single-family residence was built 15 years ago for \$73,000. The cost index when it was built was 1.02. The current cost index is 1.10. What is the RCN?

**Answer:**

**Formula: Current index / prior index = multiplier \* historical cost = RCN**

$$1.10 / 1.02 = 1.08 * \$73,000 = \$78,840$$

### #36 – Calculate Age-Life Depreciation

A roof has an effective age of 7 years and a total economic life of 25 years. What is the age-life depreciation?

### #36 – Calculate Age-Life Depreciation Answer

(Slide #236)

A roof has an effective age of 7 years and a total economic life of 25 years. What is the age-life depreciation?

**Answer:**

**Formula: Age Life Depreciation = Effective Age / Total Economic Life**

**Age Life Depreciation = 7 / 25 or 28%**

### #37 – Calculate Accrued Depreciation

What is the accrued depreciation using the following:

Actual Age = 7 years

Effective Age = 11 years

Estimated Remaining Economic Life = 30 years

RCN = \$175,000

## #37 – Calculate Accrued Depreciation Answer

(Slide #237)

What is the accrued depreciation using the following:

Actual Age = 7 years

Effective Age = 11 years

Estimated Remaining Economic Life = 30 years

RCN = \$175,000

### Answer:

#### Step 1: Calculate Total Economic Life

**Effective Age + Remaining Economic Life = Total Economic Life**

**11 years (EL) + 30 years (REL) = 41 years (TEL)**

#### Step 2: Calculate Depreciation

**Depreciation = Effective Age / Total Economic Life**

**11 (EL) / 41 (TEL) = 26.83% (Deprec)**

#### Step 3: Calculate Accrued Depreciation

**Accrued Depreciation = RCN \* Depreciation**

**\$175,000 (RCN) \* 26.83% (Deprec) = \$46,952.50 (Accrued Deprec)**



### #38 – Calculate Age Life

What is the assessed value of real property in Nevada with a 35% assessment ratio using the following:

Actual Age: 25 years

Adjusted Actual Age: 21 years

Effective Age: 17 years

RCN: \$235,000

Land Value: \$125,000

## #38 – Calculate Age Life Answer

(Slide #238)

In Nevada, what is the assessed value of real property in Nevada with a 35% assessment ratio using the following:

Actual Age: 25 years

Adjusted Actual Age: 21 years

Effective Age: 17 years

RCN: \$235,000

Land Value: \$125,000

### Answer:

**Step 1: Calculate Accrued Depreciation – Real Property in Nevada depreciates at 1.5% per year**

$$\text{Accrued Depreciation} = \text{Adjusted Actual Age} * 1.5\% * \text{RCN}$$

$$21 * 1.5\% = .315 * \$235,000 = \$74,025$$

**Step 2: Calculate RCNLD**

$$\text{RCNLD} = \text{RCN} - \text{Depreciation}$$

$$\$235,000 - \$74,025 = \$160,975$$

**Step 3: Calculate Total Property Value**

$$\text{Total Property Value} = \text{RCNLD} + \text{Land Value}$$

$$\$160,975 + \$125,000 = \$285,975$$

**Step 4: Calculate Assessed Value**

$$\text{Assessed Value} = \text{Total Property Value} * 35\%$$

$$\$285,975 * 35\% = \$100,091.25$$

### #39 – Calculate Accrued Depreciation

Comparable properties sell for \$121,500. The subject property has a land value of \$12,000 and the RCN for its improvements is \$123,000. What is the indicated accrued depreciation?

## #39 – Calculate Accrued Depreciation Answer

(Slide #239)

Comparable properties sell for \$121,500. The subject property has a land value of \$12,000 and the RCN for its improvements is \$123,000. What is the indicated accrued depreciation?

**Answer:**

**Step 1: Calculate Subject Property Value**

**Value = Land + Improvements**

**\$12,000 + \$123,000 = \$135,000**

**Step 2: Calculate Indicated Accrued Depreciation (Subject – Comparable Sales)**

**\$135,000 - \$121,500 = \$13,500**

#### #40 – Calculate Time Adjustment for Comparable Sales

A property sold 6 months ago for \$250,000 and sold again recently for \$265,000. Calculate the monthly adjustment for time.

## #40 – Calculate Time Adjustment for Comparable Sales Answer

(Slide #248)

A property sold 6 months ago for \$250,000 and sold again recently for \$265,000. Calculate the monthly adjustment for time.

**Answer:**

**Formula: (Now – Then) / Then = % / # of months elapsed = monthly time adjustment**

**$(\$265,000 - \$250,000) / \$250,000 = .06 / 6 = .01$  or 1% monthly time adjustment**

### #41 – Identify Adjustment Factor and Comparability to Subject

Using the data below, identify the sale with the lowest composite adjustment factor and the sale that is most comparable to the subject.

Sale	Time	Location	Size	Condition	Composite Adj Factor	Comparability
1	6	-2	1	4		
2	5	-2	5	-6		
3	4	1	3	4		
4	3	3	4	-6		
5	2	0	2	2		

## #41 – Identify Adjustment Factor and Comparability to Subject Answer

(Slide # 250)

Using the data below, identify the sale with the lowest composite adjustment factor and the sale that is most comparable to the subject.

Sale	Time	Location	Size	Condition	Composite Adj Factor	Comparability
1	6	-2	1	4	9	13
2	5	-2	5	-6	2	18
3	4	1	3	4	12	12
4	3	3	4	-6	4	16
5	2	0	2	2	6	6

**Answer:**

**Step 1: Calculate the Composite Adjustment Factor**

**Formula: Sum of Adjustments (Time + Location + Size + Condition)**

**Step 2: Calculate the Comparability to Subject**

**Formula: Add all adjustments as positive numbers**

**Lowest Composite Adjustment Factor = Sale #2**

**Most Comparable to Subject Property = Sale #5**



### #42 – Calculate Market Rate Adjustment

What is the indicated monthly adjustment for market conditions for the following parcels?

Sale 1 – 8 months ago - \$125,000

Sale 2 – 1 month ago - \$142,000

Sale 3 – 3 months ago - \$137,000

Sale 4 – current - \$151,000

	<b>Sale 1</b>	<b>Sale 2</b>	<b>Sale 3</b>	<b>Sale 4</b>
Months Elapsed	8	1	3	0
Sale Price	\$125,000	\$142,000	\$137,000	\$151,000
Price Change				
% Change				
% Change / Month				
Average				

## #42 – Calculate Market Rate Adjustment Answer

(Slide #251)

What is the indicated monthly adjustment for market conditions for the following parcels?

Sale 1 – 8 months ago - \$125,000

Sale 2 – 1 month ago - \$142,000

Sale 3 – 3 months ago - \$137,000

Sale 4 – current - \$151,000

	Sale 1	Sale 2	Sale 3	Sale 4
Months Elapsed	8	1	3	0
Sale Price	\$125,000	\$142,000	\$137,000	\$151,000
Price Change	$\$151,000 - \$125,000 =$ $\$26,000$	$\$151,000 -$ $\$142,000 =$ $\$9,000$	$\$151,000 -$ $\$137,000 =$ $\$14,000$	$\$151,000 -$ $\$151,000 =$ $\$0$
% Change	$\$26,000 / \$125,000 =$ .20800	$\$9,000 /$ $\$142,000 =$ .06338	$\$14,000 /$ $\$137,000 =$ .10219	
% Change / Month	$.208 / 8 = .02600$	$.06338 / 1 =$ .06338	$.10219 / 3 =$ .03406	
Average	$(.02600 + .06338 +$ $.03406) / 3 = .04115$			

**Answer:**

**Step 1: Calculate the price change**

**Formula: Price Change = Current Sale Price – Sale Price**

**Step 2: Calculate the % Change**

**Formula: % Change = Price Change / Sale Price**

**Step 3: Calculate the % Change Per Month**

**Formula: % Change Per Month = % Change / Months Elapsed**

**Step 4: Calculate the Average % Per Month**

**Formula: Average % Per Month = (Sale 1 % Change/Month + Sale 2 % Change/Month + Sale 3 % Change/Month) / 3**

### #43 – Calculate Rate Using Income Approach

Commercial property has sold for \$875,000 and has a PGI of \$23,500; vacancy & collection loss are 7%; operating expenses including reserves is 35%. What is the overall rate?

## #43 – Calculate Rate Using Income Approach Answer

(Slide #258)

Commercial property has sold for \$875,000 and has a PGI of \$23,500; vacancy & collection loss are 7%; operating expenses including reserves is 35%. What is the overall rate?

**Answer:**

**Formula:**

**PGI**  
- **Vac & Coll**  
**EGI**  
- **Op Expenses**  
**NOI**

**Overall Rate = NOI / Sales Price (R = I / V)**

<b>PGI</b>	<b>\$23,500</b>
- <b><u>Vac &amp; Coll</u></b>	<b><u>\$23,500 * 7% = \$1,645.00</u></b>
<b>EGI</b>	<b>\$21,855</b>
- <b><u>Op Expenses</u></b>	<b><u>\$21,855 * 35% = 7,649.25</u></b>
<b>NOI</b>	<b>\$14,205.75</b>

**\$14,205.75 / \$875,000 = .0162 or 1.62%**

#### #44 – Calculate NOI Using Income Approach

Calculate the NOI for an office complex with the following information:

PGI = \$1,200,000

Vacancy & Collection Loss = 2.5%

Expense Ratio = 41%

## #44 – Calculate NOI Using Income Approach Answer

(Slide #259)

Calculate the NOI for an office complex with the following information:

PGI = \$1,200,000

Vacancy & Collection Loss = 2.5%

Expense Ratio = 41%

**Answer:**

**Formula:**

**PGI**  
- **Vac & Coll**  
**EGI**  
- **Op Expenses**  
**NOI**

<b>PGI</b>	<b>\$1,200,000</b>
- <b><u>Vac &amp; Coll</u></b>	<b><u>\$1,200,000 * 2.5% = \$30,000</u></b>
<b>EGI</b>	<b>\$1,170,000</b>
- <b><u>Op Expenses</u></b>	<b><u>\$1,170,000 * 41% = 479,700</u></b>
<b>NOI</b>	<b>\$690,300</b>

### #45 - Calculate Gross Income Multiplier

Assume the gross income multiplier derived from comparable properties is 6.25 and the estimated potential gross income for the subject property is \$80,000.

What is the indicated market value?

## #45 - Valuing Property Using Gross Income Multiplier Answer

(Slide #272)

Assume the gross income multiplier derived from comparable properties is 6.25 and the estimated potential gross income for the subject property is \$80,000.

What is the indicated market value?

**Answer:**      **Formula:  $V = \text{GIM} * \text{PGI}$**

$$V = 6.25 * \$80,000$$

$$V = \$500,000$$



### **#46 – Calculate Rate Using Band of Investment**

Typical properties are financed with 55% debt and a mortgage constant of 10.5%. The equity dividend rate is 11%. What is the overall rate?

## #46 – Calculate Rate Using Band of Investment Answer

(Slide #266)

Typical properties are financed with **55%** debt and a mortgage constant of **10.5%**. The equity dividend rate is **11%**. What is the overall rate?

**Answer:**

	<b>% of Investment</b>	<b>Rate</b>	<b>Contribution</b>
<b>Debt</b>	<b>55%</b>	<b>10.5%</b>	<b>.55 * .105 = .05775</b>
<b>Equity</b>	<b>100% - 55% = 45%</b>	<b>11%</b>	<b>.45 * .11 = .0495</b>
<b>Totals</b>	<b>100%</b>		<b>.05775 + .0495 = .10725 or 10.725%</b>

### #47 – Calculate Discount Rate

A commercial property sold for \$750,000 and has an EGI of \$130,000. Operating expenses including reserves are \$85,000. What is the overall rate?

## #47 – Calculate Discount Rate Answer

(Slide #267)

A commercial property sold for \$750,000 and has an EGI of \$130,000. Operating expenses including reserves are \$85,000. What is the overall rate?

**Answer:**

**Use IRV – Overall Rate = NOI / Sales Price (R = I / V)**

**Step 1: Calculate NOI**

	PGI
-	<u>Vac &amp; Coll</u>
	EGI
-	<u>Op Expenses</u>
	NOI

**EGI – Operating Expenses = NOI**

**\$130,000 - \$85,000 = \$45,000**

**Step 2: Calculate Rate**

**\$45,000 / \$750,000 = .06 or 6%**

### #48 – Calculate Recapture Rate

A building originally had a life of 50 years. It is now 15 years old. What is the recapture rate?

## #48 – Calculate Recapture Rate Answer

(Slide #268)

A building originally had a life of 50 years. It is now 15 years old. What is the recapture rate?

**Answer:**

**Formula: Remaining Economic Life = Original Life – Remaining Life**

**Recapture Rate =  $1 / \text{Remaining Economic Life}$**

**$50 - 15 = 35$**

**$1 / 35 = .0285$  or **2.85%****

### #49 - Calculate Tax Rate

If the Effective Tax Rate is 5% and the Assessment Level is 50%, what is the Tax Rate?

## #49 - Calculate Tax Rate Answer

(Slide #269)

If the Effective Tax Rate is 5% and the Assessment Level is 50%, what is the Tax Rate?

**Answer:**  $T = E / A$

$T = 5\% \text{ (or } .05) / 50\% \text{ (or } .5)$

$T = .05 / .5$

$T = .1 \text{ or } 10\%$



### #50 - Calculate the Gross Rent Multiplier (GRM)

Calculate the Gross Rent Multiplier (GRM) for each of these sales:

	<b>Sale Price</b>	<b>Monthly Rent</b>		<b>GRM</b>
Sale 1	\$175,000	\$19,400		
Sale 2	\$260,000	\$22,000		
Sale 3	\$220,000	\$21,980		

## #50 - Calculate the Gross Rent Multiplier (GRM)

(Slide #273)

Calculate the Gross Rent Multiplier (GRM) for each of these sales:

	<b>Sale Price</b>	<b>Monthly Rent</b>		<b>GRM</b>
Sale 1	\$175,000	\$19,400	$\$175,000 / \$19,400 =$	<b>9.0206</b>
Sale 2	\$260,000	\$22,000	$\$260,000 / \$22,000 =$	<b>11.8182</b>
Sale 3	\$220,000	\$21,980	$\$220,000 / \$21,980 =$	<b>10.0091</b>

**Step 1: Calculate the GRM (Formula:  $GRM = \text{Sale Price} / \text{Monthly Rent}$ )**

### #51 - Calculate the Gross Income Multiplier

Calculate the Price Per Unit per Month for the Subject Property:

	<b>Subject</b>	<b>Comp 1</b>	<b>Comp 2</b>	<b>Comp 3</b>
Rental Income Per Unit Per Month		\$1,200	\$1,250	\$1,150
# of Units	24	16	18	10
Sale Price		\$1,350,000	\$1,475,000	\$1,250,000
Price Per Unit		\$75,000	\$82,000	\$65,000
GIM				
Gross Income	\$320,000			

## #51 - Calculate the Gross Income Multiplier Answer

(Slide #274)

Calculate the Price Per Unit per Month for the Subject Property:

	Subject	Comp 1	Comp 2	Comp 3
Rental Income Per Unit Per Month	$\$320,000 / 12 / 24 =$ $\$1,111.11$	$\$1,200$	$\$1,250$	$\$1,150$
# of Units	24	16	18	10
Sale Price	$\$320,000 * 6.7934 =$ $\$2,173,888.00$	$\$1,350,000$	$\$1,475,000$	$\$1,250,000$
Price Per Unit	$\$2,173,888 / 24 =$ $\$90,578.67$	$\$75,000$	$\$82,000$	$\$65,000$
GIM	$(5.859375 + 5.462962963 + 9.057971014) / 3 =$ 6.793436	$\$1,350,000 / \$230,400 =$ 5.859375	$\$1,475,000 / \$270,000 =$ 5.462963	$\$1,250,000 / \$138,000 =$ 9.057971
round to 4 places	6.7934	5.8594	5.4630	9.0580
Gross Income	$\$320,000$	$\$1,200 * 16 * 12 \text{ mos} =$ $\$230,400$	$\$1,250 * 18 * 12 \text{ mos} =$ $\$270,000$	$\$1,150 * 10 * 12 \text{ mos} =$ $\$138,000$

Step 1: Calculate the Gross Income

Formula: Gross Income = Monthly Income \* # of Units \* 12 Months

Step 2: Calculate the GIM for the Comps

Formula: Sales Price / Income

Step 3: Calculate the GIM of the Subject

Formula: Average Comp Sales GIM

Step 4: Calculate the Rental Income Per Month of the Subject

Formula: Gross Income / 12 / # of units

Step 5: Calculate the Sale Price of the Subject

Formula: Gross Income \* Gim

Step 6: Calculate the Price Per Unit of the Subject

Formula: Sale Price / # of Units

## Rules for Rounding Whole Numbers

Determine what your rounding digit is and look to the right side of it.

- If the digit is 0, 1, 2, 3, or 4, do not change the rounding digit. All digits that are on the right-hand side of the requested rounding digit will become 0.
- If the digit is 5, 6, 7, 8, or 9, your rounding digit rounds up by one number. All digits that are on the right-hand side of the requested rounding digit will become 0.

## Rounding Rules for Decimal Numbers

Determine what your rounding digit is and look to the right side of it.

- If that digit is 4, 3, 2, or 1, simply drop all digits to the right of it.
- If that digit is 5, 6, 7, 8, or 9 add one to the rounding digit and drop all digits to the right of it.

## Examples of How to Round Numbers

765.3682 becomes:

- 1,000 when asked to round to the nearest 1,000
- 800 when asked to round to the nearest 100
- 770 when asked to round to the nearest 10
- 765 when asked to round to the nearest one (1)
- 765.4 when asked to round to the nearest 10th
- 765.37 when asked to round to the nearest 100th
- 765.368 when asked to round to the nearest (1,000th)