



BASIC DIVISION ORDER CALCULATIONS

NADOA CONFERENCE 2014 - CHICAGO

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BASIC DIVISION ORDER CALCULATIONS WORKSHOP

FOREWARD

If you are new to the world of a land professional, you may find that there are many different formulas that division order analysts and other land professionals use to calculate interests in an oil and gas well. Royalty payments, bonus payments, delay rentals, undivided mineral interests, working interests, net revenue interests, gross acres, and net acres - all are calculations done on the exploration side of the oil and gas industry.

It is the purpose of this manual to provide the formulas and present the basic overview for these types of calculations. In the first section of the manual, problems are presented in a worksheet format with blanks for answers. At the end of the manual, the answers for each problem are provided.

In addition, as a way to improve understanding of these calculations and to make the solutions available to all, we have created short youtube videos for each problem shown in the manual. In the videos, we provide a step by step method for solving the problems by having an expert work and explain the problem. The youtube links are provided in the Answers section of the manual.

These online tutorials are offered at no charge, compliments of Alyce Hoge of Land Training and Sherry Robinson of Division Order Beginnings. Please share the links with anyone you think might benefit. It is the hope of the authors that this work will prove beneficial in the day to day work of a land professional.

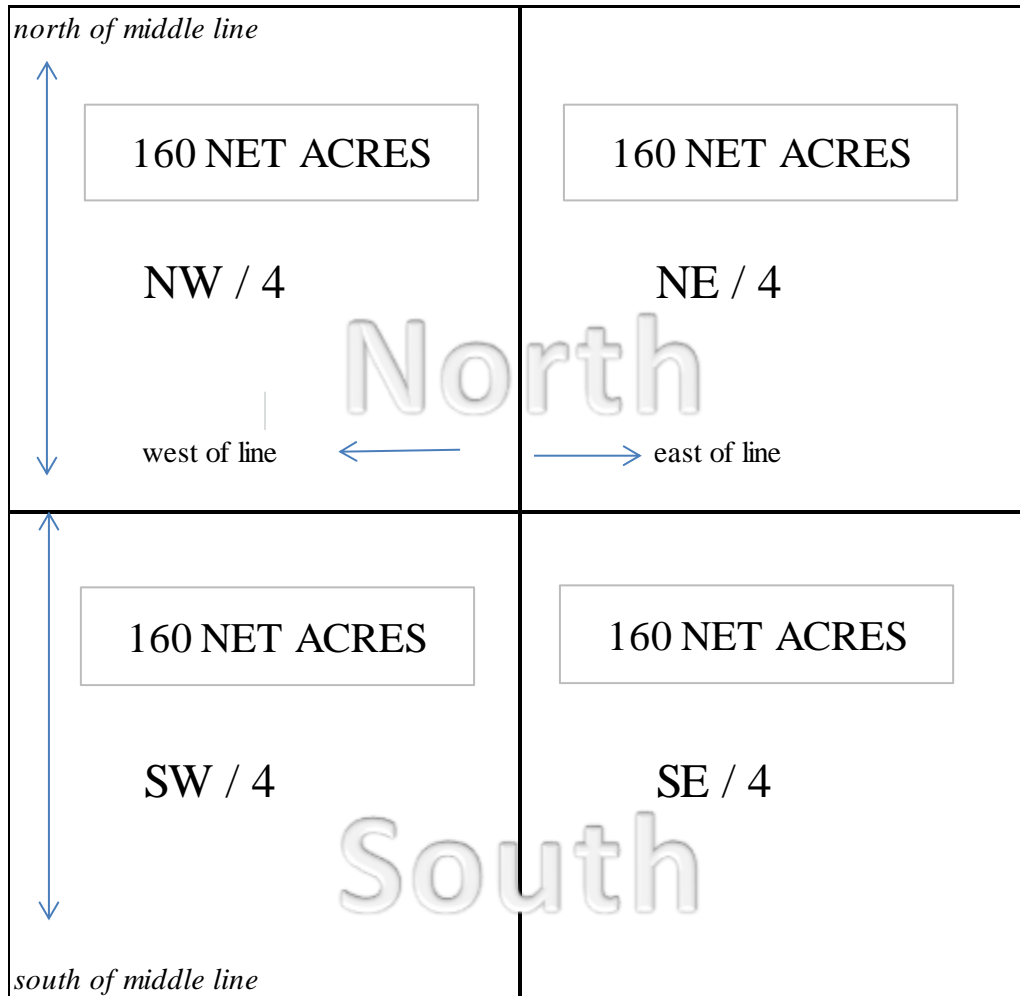
For more information about our courses, please visit our websites at www.landtraining.net and www.divisionorderbeginnings.com.

To learn more about our Online Division Order Certificate Program, please visit Midland College PPDC at www.ce.midland.edu/ppdc .

I. LEGAL DESCRIPTIONS - CALCULATING & PLOTTING ACREAGE

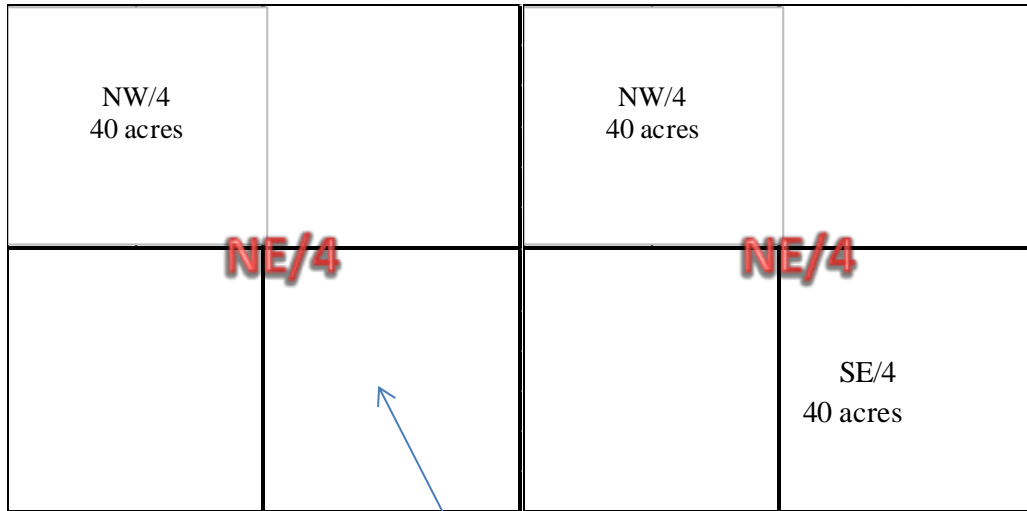
Legal Descriptions Tutorial: <http://youtu.be/umgrWrBfOLo>

Example of a section of land containing 640 acres (160+160+160+160):



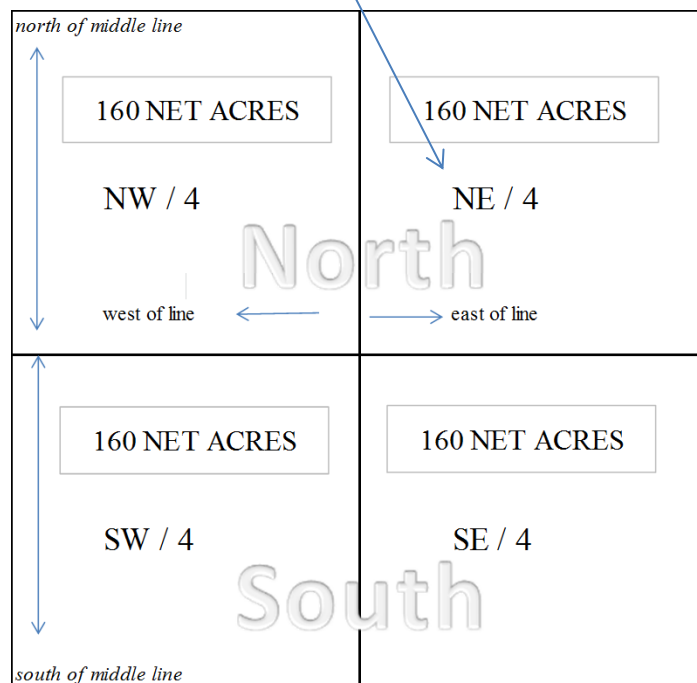
Section 4, T2N-R4W

When plotting a legal description, visualize the “box” divided into 4 sections. If a legal description contains a comma, this is indicating that the description within that comma is ONE legal description. We read the description backwards within the comma: Below is an example of a legal description located in the NE/4



NW/4 of the NE/4
 40 acres

NW/4 of the NE/4, SE/4 of NE/4
 40 + 40 = 80 Acres



Plot the following legal descriptions and calculate the acreage:

Problem 1: NW/4 of Section 4 – T2N-R4W, NW/4



= _____ Acres

Problem 2: NE/4 of the SE/4



= _____ Acres

Problem 3: E/2 of the SW/4



= _____ Acres

Please note: No youtube specific tutorials available on each problem but answers are in the back.

II. ROYALTY DECIMAL CALCULATION-

Division Order Analysts work in decimals when calculating a royalty owner's interest since it's easier to convert decimal interests to dollars and cents. In order to be as precise as possible, an owner's decimal interest is calculated out to the 8th decimal place i.e. .06250000. Keep in mind that 100% equals 1.00 in decimal format.

So, how is a fraction converted to a decimal interest?

Convert Fraction to Decimal

Formula: $\frac{\text{Numerator}}{\text{Denominator}}$

Example: $\frac{1}{2} = .50$ (1 divided by 2)

Problem 1: John F. Kennedy leases 160 acres to Cuban Drilling for a $\frac{1}{8}$ royalty. What is JFK's royalty decimal?

= _____ Royalty Decimal

Problem 2: John F. Kennedy leases 320 acres to Onassis Drilling for a $\frac{3}{16}$ th royalty. What is JFK's royalty decimal?

= _____ Royalty Decimal

Problem 3: John F. Kennedy leases 25 acres to Dallas Drilling for a $\frac{1}{4}$ royalty. What is JFK's royalty decimal?

= _____ Royalty Decimal

Problem 4: John F. Kennedy leases 640 acres to Johnson Drilling for a $\frac{1}{5}$ royalty. What is JFK's royalty decimal?

= _____ Royalty Decimal

Complete the Following Chart:

<u>Fraction:</u>	<u>Decimal Interest:</u>
1/8	= _____
3/16	= _____
1/4	= _____
1/5	= _____

III. GWI & NRI IN AN OIL & GAS LEASE – ONE OWNER

Calculating Gross Working Interest and Net Revenue Interest for Lessor and Lessee

A mineral owner, before being leased, has the right to participate in the drilling of a well and have a 100% **Gross Working Interest (GWI)** in the lease. This GWI means the mineral owner is required to pay 100% of the drilling costs and be entitled to 100% of the profits.

With wells costing millions of dollars, the prospect of drilling one's own well is usually cost prohibitive for most mineral owners. Thus, a mineral owner will lease his land to an oil and gas company and exchange its GWI for a share of the production, expressed as a fraction in the lease. This share of production is termed a **Royalty Interest (RI)** or a **lease burden**.

Once the land is leased, the mineral owner is referred to as a **lessor** and the oil and gas company as a **lessee**. Since the lessor no longer owns a GWI, his rights to profits are limited to the RI only. The profits are referred to as a **Net Revenue Interest (NRI)**.

When determining leasehold interests, both the GWI and the NRI of both the lessor and the lessee are calculated. For a mineral owner *before* a lease is taken, the GWI and NRI are the same: 100%. But *after* the lease is taken, the lessee owns 100% of the GWI and the lessor only owns its RI. The lessee's NRI is calculated by deducting the lease burdens from 100%. The lessor's NRI is simply the royalty interest.

So, how is the GWI and NRI of the Lessor and Lessee calculated in an oil and gas lease?

Formulas:

For Lessor:

$$GWI = 0$$

$$NRI = \text{Royalty Interest}$$

For Lessee

$$GWI: \text{Total Leasehold Interest \%}$$

$$NRI: GWI - \text{Burdens (RI, ORRI)}$$

Example: Harry Truman has a **100%** ownership interest in the NW/4 of Section 10. Hiroshima Drilling leases all **160** acres from Harry Truman for a **1/8** royalty interest.

Calculate the WI and NRI for each.

	<u>Before the Lease</u>		<u>After the Lease</u>	
	<u>GWI</u>	<u>NRI</u>	<u>GWI</u>	<u>NRI</u>
Harry Truman/Lessor	<u>100%</u>	<u>100%</u>	<u>0</u>	<u>.125</u>
Hiroshima Drilling/Lessee	<u>0</u>	<u>0</u>	<u>100%</u>	<u>.875</u>
				1.00

Problem 1: Gerald Ford has a **100%** ownership interest in the S/2 of Section 23. He leases all **320** acres to Pardon Drilling for a **3/16** royalty.

Calculate the WI and NRI for each.

	<u>Before the Lease</u>		<u>After the Lease</u>	
	<u>GWI</u>	<u>NRI</u>	<u>GWI</u>	<u>NRI</u>
Lessor _____	_____	_____	_____	_____
Lessee _____	_____	_____	_____	_____
				1.00

Problem 2: James Bond has a **100%** ownership interest in the NE/4 of the NE/4 of section 22. Bond leases all **40** acres to Fleming Resources for a **1/4** royalty.

Calculate the GWI and NRI for each.

	<u>Before the Lease</u>		<u>After the Lease</u>	
	<u>GWI</u>	<u>NRI</u>	<u>GWI</u>	<u>NRI</u>
Lessor _____	_____	_____	_____	_____
Lessee _____	_____	_____	_____	_____

IV. NRI CALCULATIONS OF MINERAL OWNER - POOLED UNIT

This section deals with calculations when a pooled unit is involved. A **pooled unit**, also referred to as a **drilling & spacing unit** or simply as a **unit**, is a requirement of state law to avoid environmental waste and to recover more minerals from the ground. These laws limit the number of wells drilled in a given area and establish how far apart each well must be from another well. For example, some state laws dictate that in a 160 acre tract, only one oil well is permitted. (Gas wells usually encompass greater acreage and these may be limited to one well for every 640 acres.) If there is more than one lease in the 160 acres, these leases are combined together under the lease pooling provision in and state pooling laws.

For the mineral owner, the advantage of pooling is that they will get a share of the production, even if the well is not drilled on their lease. For the oil and gas company, the advantage of pooling is economics. Rather than drill a well on each and every lease (costing t costs millions of dollars for each lease well) under pooling laws, an oil and gas company need only drill a single well in the 160 acres, thus dramatically reducing costs.

However, for the mineral owner, including their lease in a pooled unit reduces the amount of their NRI by multiplying it by the number of acres in a mineral owner's lease (Tract Acres) by the total acres in the spacing unit (Unit Acres).

Here's the formula: **Royalty Interest x Number of Acres in the Lease (also referred to as Tract Acres) divided by unit acres, equals the owner's NRI.** Remember we convert the royalty fraction on the lease to a decimal.

$$\text{Formula: Royalty Interest (RI)} \times \frac{\text{Tract Acres}}{\text{Unit Acres}} = \text{NRI}$$

$$\text{Example: } \frac{1/8 \times 160 \text{ Tract Acres}}{640 \text{ Unit Acres}} \quad \text{OR} \quad .125 \times .25 = \underline{.03125} \text{ NRI}$$

Problem 1: Farmer Brown owns a mineral interest in 160 acres of land. He leases his land to Cajun Drilling for a 1/8 royalty interest. Cajun Drilling requests a well permit for gas and forms a 640 acre pooling unit. What is Mr. Brown's NRI?

Step 1: Set up the calculation: $\frac{1}{8} \text{ RI} \times \frac{160 \text{ Tract Acres}}{640 \text{ Unit Acres}} = \text{_____ NRI}$

Step 2: Convert Fractions to decimals.

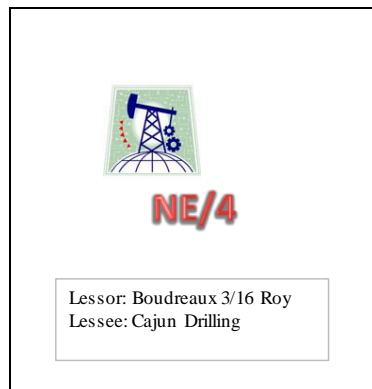
1 divided by 8 = a

160 divided by 640 = b

Step 3: Multiply the answers in the blanks:

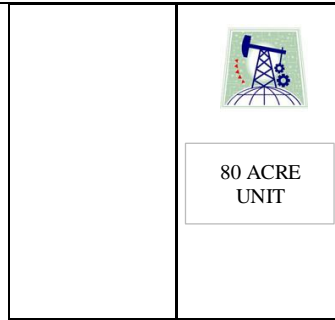
 a x b = c

Lease Royalty Interest x Tract Acres Divided by the Unit = NRI



Problem 2: Boudreaux owns **160** acres in Opelousas, Louisiana. He leases his interest to Cajun Drilling for a **3/16** RI. A well is drilled by Cajun Drilling in a **160** acre drilling and spacing unit. What is Boudreaux's NRI?

 x / = NRI
RI Tract Acres/Unit Acres



Problem 3: Franklin Roosevelt owns **20** acres in Depression Alley. He leases his land to New Deal Drilling for a **3/16** RI. A well is drilled by New Deal Drilling in an **80** acre drilling and spacing unit. What is Franklin's NRI?

= _____ NRI

Problem 4: You own **10** acres in the Marcellus Shale. You lease your land to NADOA Drilling for a **1/5** RI. A well is drilled by NADOA Drilling in an **80** acre drilling and spacing unit.

What is your net revenue interest?

= _____ NRI

V. NRI -JOINT OWNERSHIP (UNDIVIDED INTERESTS) - SAME RI

An undivided interest occurs when there are two or more individuals who own an interest in the same property. The ownership is “**undivided**” because what is owned is a percentage of the total acreage, not specific acreages i.e. NW/4 of SW/4. With an *undivided interest*, joint owners own a percentage of every molecule in the property.

For example, Boudreaux & Thibodeaux own an equal interest in 160 acres. Boudreaux owns a 50% undivided interest in the property and Thibodeaux owns the other 50%. Their share of the interest is referred to as a **Mineral Interest (MI)**. Thus, Boudreaux owns a 50% MI and Thibodeaux owns a 50% MI. This will reduce the amount of their NRI by their MI since neither owns 100% of the minerals. Boudreaux and Thibodeaux are referred to as **Joint Tenants, Co-Tenants or Tenants in Common (TIC)**.

Formula for calculating NRI for the lessor when the mineral ownership is jointly owned:

$$RI \times MI = NRI$$

*Example: $1/8 \times 50\% MI =$
 $.125 \times .50 = .0625 NRI$*

Problem 1: Mike Brady owns 160 acres in the NW/4 of Section 6. Upon his death, his property passes to his four children, Greg, Peter, Bobby and Cindy who each own a 25% undivided interest in the 160 acres. Marshall Drilling leases the property from *all the heirs* each with their own separate lease. Each negotiates a 1/8 RI for their respective lease.

What is the NRI of each?

	<u>RI</u>	x	<u>MI</u>	=	<u>NRI</u>
Lessor #1 Name: <u>Greg</u>	<u>.125</u>		_____		_____
Lessor #2 Name: <u>Peter</u>	_____		_____		_____
Lessor #3 Name: <u>Bobby</u>	_____		_____		_____
Lessor #4 Name: <u>Cindy</u>	_____		_____		_____

Problem 2: Tracy, Liz and Jenna own an equal undivided interest in 80 acres. They lease their land to Rocky Drilling for a 3/16 royalty interest. What is the NRI of each?

	<u>RI</u>	x	<u>MI</u>	=	<u>NRI</u>
Lessor #1:	_____		_____		_____
Lessor #2:	_____		_____		_____
Lessor #3:	_____		_____		_____

VI. NRI-JOINT OWNERSHIP (UNDIVIDED INTERESTS) – DIFFERENT RI

Using the same situation in Chapter V, now assume Greg, Peter, Bobby and Cindy have their own leases but negotiate *different* RI's.

What is the NRI of each?

$$\text{Formula: RI} \times \text{MI} = \text{NRI}$$

$$\text{Example: } \frac{1}{8} \times 50\% \text{ Ownership Interest} = \text{NRI}$$

$$.125 \times .50 = \underline{.06250000 \text{ NRI}}$$

Problem 1: Mike Brady owns in the NW/4 or 160 acres of Section 6. When he dies, his property passes to his four children, Greg, Peter, Bobby and Cindy who each own a 25% interest in the 160 acres. Marshall Drilling seeks to lease the property. Each signs a separate lease but negotiates different royalties. Greg signs a lease for a $\frac{1}{4}$ RI, Peter signs for a $\frac{3}{16}$ RI, Bobby signs for a $\frac{1}{8}$ RI and Cindy signs for a $\frac{1}{8}$ RI. What is the NRI of each

	<u>RI</u>	x	<u>MI</u>	=	<u>NRI</u>
Lessor #1 Name: <u>Greg</u>	<u>.25</u>	x	<u>.25</u>	=	<u>.0625000</u> NRI

Lessor #2 Name: <u>Peter</u>	_____	x	_____	=	_____NRI
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Lessor #3 Name: <u>Bobby</u>	_____	x	_____	=	_____NRI
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Lessor #4 Name: <u>Cindy</u>	_____	x	_____	=	_____NRI
------------------------------	-------	---	-------	---	----------

Problem 2: Tracy, Liz, Jenna and Grizz own an equal undivided interest in 80 acres. Rocky Drilling takes separate lease from each co-tenant. Tracy leases for a $\frac{1}{8}$ RI, Liz leases for a $\frac{3}{16}$ RI, Jenna leases for a $\frac{1}{8}$ RI and Grizz leases for a $\frac{3}{16}$ RI. What is the NRI of each?

<u>Name</u>	<u>RI</u>	x	<u>MI</u>	=	<u>NRI</u>
Lessor #1: _____	_____		_____	=	_____ NRI
Lessor #2: _____	_____		_____	=	_____ NRI
Lessor #3: _____	_____		_____	=	_____ NRI
Lessor #4: _____	_____		_____	=	_____ NRI

Problem 3: Leonard, Penny, Raj & Sheldon each own an equal undivided interest in 1,280 acres. Each signs a separate lease with Big Bang Drilling. Leonard's lease contains $\frac{1}{4}$ RI, Penny's contains a $\frac{3}{16}$, Raj has a $\frac{1}{8}$ and Sheldon has a $\frac{3}{16}$ RI. What is the NRI of each?

<u>Name</u>	<u>RI</u>	x	<u>MI</u>	=	<u>NRI</u>
Lessor #1: _____	_____		_____	=	_____ NRI
Lessor #2: _____	_____		_____	=	_____ NRI
Lessor #3: _____	_____		_____	=	_____ NRI
Lessor #4: _____	_____		_____	=	_____ NRI

VII. NRI – JOINT OWNERSHIP (UNDIVIDED INTEREST) DIFFERENT RI IN SPACING UNIT

Formula: $RI \times MI \times \text{Net Acres}$

Unit Acres = NRI

Example: $1/8 \times 50\% \times \text{160 Net Acres}$

640 Unit Acres

$.125 \times .50 \times .25 = \underline{.015625 \text{ NRI}}$

160/640 = .25

Problem 1: Mike Brady owns 160 acres in the NW/4 of Section 6. Upon his death, his property passes to his four children: Greg, Peter, Bobby and Cindy who each own a 25% undivided interest in the 160 acres. Marshall Drilling separately leases from each heir. the property. Each child signs a separate lease with different royalties. **Greg's** lease contains a $1/4$ RI, **Peter's** lease contains a $3/16$ RI, Bobby's contains a $1/8$ RI and Cindy's contains a $1/8$ RI. A well is drilled by Marshall Drilling in a 320 acre drilling and spacing unit.

Calculate the Net Revenue Interest of each owner:

Lessor #1: Greg $\frac{RI}{.25} \times \frac{MI}{.25} \times \frac{\text{Tract Acres/Unit Acres}}{160/320} = \underline{.03125 \text{ NRI}}$

Lessor #2: Peter _____ x _____ = _____

Lessor #3: Bobby _____ x _____ = _____

Lessor #4 Cindy _____ x _____ = _____

Problem 2: Tracy, Liz and Jenna own an equal undivided interest in 80 acres. They lease their land to Rocky Drilling for a 1/8, 3/16 and 1/5 royalty interest respectively. A well is drilled by Rocky Drilling in an 80 acre drilling and spacing unit. What is the NRI of each?

$$\underline{RI} \quad \times \quad \underline{MI} \quad \times \quad \underline{\text{Tract Acres/Unit Acres}} = \quad \underline{NRI}$$

Lessor #1: _____ x _____ = _____

Lessor #2: : _____ x _____ = _____

Lessor #3 _____ x _____ = _____

VIII. NRI – JOINT OWNERSHIP (UNDIVIDED INTEREST) – DIFFERENT RI IN SPACING UNIT & DIFFERENT WI OWNERS

In a highly competitive leasing area, companies often agree to jointly develop an area pursuant to a **Joint Operating Agreement (JOA)**. Each of the companies in the JOA is referred to as a **Working Interest (WI) Owner** and their percentage of interest in the well is based on the leasehold acreage each contributes to the JOA, expressed as a percentage. Typically, the interest percentage of each WI owner is spelled out in Exhibit A of the JOA.

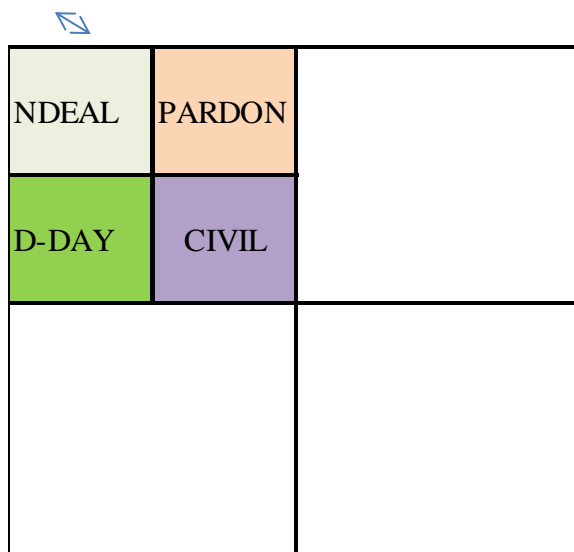
For this example, assume Exhibit A of the JOA reflects the ownership interests of the four companies, New Deal, Pardon, D-Day and Civil own in the NW/4 of the section, and they each have 40 acres, giving them an equal 6.25% interest in the well.

Formula:

Lessee's Interests: $GWI - Burden\ Decimal = Net\ Revenue\ Working\ Int.$

Lessor's Interests : $RI \times lease\ acres / 640 = Net\ Revenue\ Decimal$

NW/4



Franklin Roosevelt, Gerald Ford, Dwight Eisenhower and Lyndon Johnson own an equal undivided ownership interest in the NW/4 (**160 acres**) in the Presidential Shale. They each lease to different oil and gas companies with different royalty rates:

- **Roosevelt** leases his 40 acres to **New Deal** Drilling for a **1/8 RI**
- **Gerald Ford** leases his 40 acres to **Pardon** Drilling for a **1/8 RI**
- **Dwight Eisenhower** leases his 40 acres to **D-Day** Drilling for a **3/16 RI**
- **Lyndon Johnson** leases his 40 acres to **Civil** Drilling for a **3/16 RI**

New Deal, Nixon Drilling, D-Day Drilling and Civil Drilling agree to jointly operate the property and form a **640 acre drilling** and spacing unit. What are the interests of the parties?

<u>Lessors:</u>	<u>RI</u>	<u>Tract Acres/ Unit Acres</u>	<u>=</u>	<u>NRI</u>
Lessor #1: FDR	_____	_____/_____	=	_____
Lessor #2: Gerald	_____	_____/_____	=	_____
Lessor #3: Dwight	_____	_____/_____	=	_____
Lessor #4: LBJ	_____	_____/_____	=	_____
		Royalty Burdens	=	_____

<u>Lessees:</u>	<u>GWI</u>	<u>-Burdens</u>	<u>=</u>	<u>NRI</u>
Lessee #1: _____	_____	_____	=	_____
Lessee #2: _____	_____	_____	=	_____
Lessee #3: _____	_____	_____	=	_____
Lessee #4: _____	_____	_____	=	_____
		Leasehold Net	=	_____

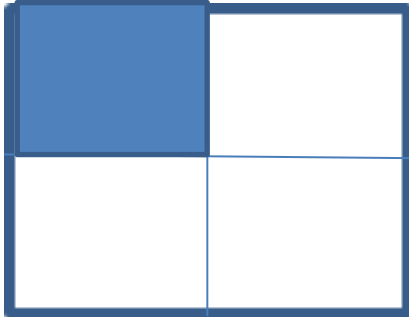
$$\underline{\text{Royalty Burdens}} + \underline{\text{Leasehold Net}} = .25 \checkmark$$

ANSWERS:

I. LEGAL DESCRIPTIONS

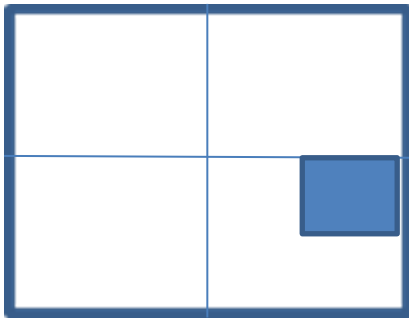
Plot the following legal descriptions and calculate the acreage:

Problem 1: NW/4 of Section 4 – T2N-R4W



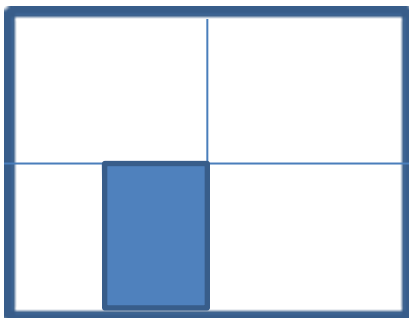
= 160 Acres

Problem 2: NE/4 of the SE/4



= 40 Acres

Problem 3: E/2 of the SW/4



= 80 Acres

II. ROYALTY INTEREST CALCULATION – CONVERT FRACTION TO DECIMAL – ANSWER(PAGE 5)

Problem 1: John F. Kennedy leases 160 acres to Cuban Drilling for a $\frac{1}{8}$ royalty. What is JFK's royalty decimal?

= **.125** Royalty Decimal

<http://youtu.be/FmGFM1iHHD8>

Problem 2: John F. Kennedy leases 320 acres to Onassis Drilling for a $\frac{3}{16}$ th royalty. What is JFK's royalty decimal?

= **.1875** Royalty Decimal

<http://youtu.be/TSDkXLC0sYc>

Problem 3: John F. Kennedy leases 25 acres to Dallas Drilling for a $\frac{1}{4}$ royalty. What is JFK's royalty decimal?

= **.25** Royalty Decimal

<http://youtu.be/YbLEbv9Ho8s>

Problem 4: John F. Kennedy leases 640 acres to Johnson Drilling for a $\frac{1}{5}$ royalty. What is JFK's royalty decimal?

= **.20** Royalty Decimal

http://youtu.be/Ob_QzqNylwY

Complete the Following Chart:

<u>Fraction:</u>	<u>Decimal Interest:</u>
$\frac{1}{8}$	= <u>.125</u>
$\frac{3}{16}$	= <u>.1875</u>
$\frac{1}{4}$	= <u>.25</u>
$\frac{1}{5}$	= <u>.20</u>



III. GWI & NRI IN AN OIL & GAS LEASE – ONE OWNER – ANSWER (PAGES 7-8)

Example 1: Harry Truman has a 100% ownership interest in the NW/4 of Section 10. Hiroshima Drilling leases all 160 acres from Harry Truman for a 1/8 royalty interest.

	<i>Before the Lease</i>		<i>After the Lease</i>	
	<u>GW</u>	<u>NR</u>	<u>GW</u>	<u>NR</u>
Mineral Owner/Lessor	<u>100</u>	<u>100</u>	<u>0</u>	<u>.125</u>
Oil & Gas Company/Lessee	<u>0</u>	<u>0</u>	<u>100</u>	<u>.875</u>
				= 1.0 ✓

<http://youtu.be/PjGnR-YfLy4>

Problem 1: Gerald Ford has a 100% ownership interest in the S/2 of Section 23. He leases all 320 acres to Nixon Drilling for a 3/16 royalty. Calculate the WI and NRI for each.

	<u>Before the Lease</u>		<u>After the Lease</u>	
	<u>WI</u>	<u>NRI</u>	<u>WI</u>	<u>NRI</u>
Lessor: Gerald Ford	<u>100</u>	<u>100</u>	<u>0</u>	<u>.1875</u>
Lessee: Nixon Drilling	<u>0</u>	<u>0</u>	<u>100</u>	<u>.8125</u>
				= 1.0 ✓

<http://youtu.be/5ZXvLrZc s>

Problem 2: James Bond has a 100% ownership interest in the NE NE of section 22. Bond leases all 40 acres to Fleming Resources for a 1/4 royalty. Calculate the WI and NRI for each.

	<u>Before the Lease</u>		<u>After the Lease</u>	
	<u>WI</u>	<u>NRI</u>	<u>WI</u>	<u>NRI</u>
Lessor: <u>James Bond</u>	<u>100</u>	<u>100</u>	<u>0</u>	<u>.25</u>
Lessee: <u>Fleming Resources</u>	<u>0</u>	<u>0</u>	<u>100</u>	<u>.75</u>
				= 1.0 ✓

<http://youtu.be/VtQMuwGM7rc>

IV. NRI WITH POOLING – ANSWER (PAGES 10-11)

Problem 1: Farmer Brown owns a mineral interest in 160 acres of land. He leases his land to Cajun Drilling for a 1/8 royalty interest. Cajun Drilling requests a well permit for gas and forms a 640 acre unit.

What is Mr. Brown's net revenue interest?

Step 1: Set up the calculation: $1/8 \text{ Royalty} \times 160 \text{ Tract Acres}$
640 acre spacing unit = .03125

NRI

Step 2: Convert Fractions to decimals.

1 divided by 8 = .125

160 divided by 640 = .25

Step 3: Multiply the answers in the blanks:

.125 x .25 = .03125 NRI

<http://youtu.be/WPeA0rs7SLA>

Problem 2: Boudreaux owns 160 acres in Opelousas, Louisiana. He leases his interest to Cajun Drilling for a 3/16 royalty interest. A well is drilled by Cajun Drilling in a 160 acre drilling and spacing unit. What is Boudreaux's NRI? = .1875 NRI

<http://youtu.be/VPr0ax0-o>

Problem 3: Franklin Roosevelt owns 20 acres in Depression Alley. He leases his land to New Deal Drilling for a 3/16 royalty interest. A well is drilled by New Deal Drilling in an 80 acre drilling and spacing unit. What is Franklin's NRI? = .046875 (.1875 x 20/80) NRI

<http://youtu.be/kw0rYmoBLXU>

Problem 4: You own 10 acres in the Marcellus Shale. You lease your land to NADOA Drilling for a 1/5 royalty interest. A well is drilled by NADOA Drilling in an 80 acre drilling and spacing unit. What is your NRI? = .025 (1/5 x 10/80) NRI

<http://youtu.be/kC2dYFP0U0g>

V. NRI - JOINT OWNERSHIP (UNDIVIDED INTEREST) SAME RI- ANSWER PAGES 12-13

Problem 1: Mike Brady owns 160 acres in the NW/4 of Section 6. Upon his death, his property passes to his four children, Greg, Peter, Bobby and Cindy, who each own a 25% undivided interest in the 160 acres. Marshall Drilling leases the property from all the heirs with separate leases for a 1/8 royalty interest. What is the NRI of each?

After the Lease	RI	x	MI	=	NRI
Lessor #1: Greg	<u>.125</u>		.25	=	<u>.03125</u>
Lessor #2: Peter	<u>.125</u>		.25	=	<u>.03125</u>
Lessor #3: Bobby	<u>.125</u>		.25	=	<u>.03125</u>
Lessor #4: Cindy	<u>.125</u>		.25	=	<u>.03125</u>
				=	.125 ✓

<http://youtu.be/pjP04Ns4pww>

Problem 2: Tracy, Liz and Jenna own an equal undivided interest in 80 acres. They lease their land to Rocky Drilling for a 3/16 royalty interest. What is the NRI of each?

	RI	x	MI	=	NRI
Lessor #1: Tracy	<u>.1875</u>		1/3 or .3333333	=	<u>.0625</u>
Lessor #2: Liz	<u>.1875</u>		1/3 or .3333333	=	<u>.0625</u>
Lessor #3: Jenna	<u>.1875</u>		1/3 or .3333334	=	<u>.0625</u>
				=	.18750 ✓

Round 7 places

<http://youtu.be/32Lh3EExy1w>

VI. NRI - JOINT OWNERSHIP (UNDIVIDED INTEREST) - DIFFERENT RI - ANSWER (PAGE 14)

Problem 1: Mike Brady owns 160 acres in the NW/4 of Section 6. When he died, his property passes to his four children, Greg, Peter, Bobby and Cindy who each own a 25% interest in the 160 acres. Marshall Drilling seeks to lease the property. Each child signs a separate lease with different royalties. Greg signs a lease for a ¼ RI, Peter signs for a 3/16 RI, Bobby signs for a 1/8 RI and Cindy signs for a 1/8 RI. Calculate the Net Revenue Interest of each owner:

	RI	x	MI	=	NRI
Lessor #1 Name: <u>Greg</u>	<u>.2500</u>		<u>.25</u>		<u>.062500</u>
Lessor #2 Name: <u>Peter</u>	<u>.1875</u>		<u>.25</u>		<u>.046875</u>
Lessor #3 Name: <u>Bobby</u>	<u>.1250</u>		<u>.25</u>		<u>.031250</u>
Lessor #4 Name: <u>Cindy</u>	<u>.1250</u>		<u>.25</u>		<u>.031250</u>
					.171875 ✓

<http://youtu.be/wrhow-hzf5s>

Problem 2: Tracy, Liz, Jenna and Grizz own an equal undivided interest in 80 acres. Each signs a separate lease with Rocky Drilling. Tracy's leases for a 1/8 RI, Liz leases for a 3/16 RI, Jenna leases for a 1/8 RI and Grizz leases for a 3/16 RI. What is the NRI of each?

	RI	x	MI	=	NRI
Lessor #1: <u>Tracy</u>	<u>.1250</u>		<u>.25</u>		<u>.03125</u>
Lessor #2: <u>Liz</u>	<u>.1875</u>		<u>.25</u>		<u>.046875</u>
Lessor #3: <u>Jenna</u>	<u>.1250</u>		<u>.25</u>		<u>.031250</u>
Lessor #4: <u>Grizz</u>	<u>.1875</u>		<u>.25</u>		<u>.046875</u>
					.156250 ✓

<http://youtu.be/Fo Lc oHMo8>

Problem 3: Leonard, Penny, Raj & Sheldon each own an equal undivided interest in 1,280 acres. Each signs a separate lease with Big Bang Drilling. Leonard's lease contains $\frac{1}{4}$ RI, Penny's contains a $\frac{3}{16}$, Raj has a $\frac{1}{8}$ and Sheldon has a $\frac{3}{16}$ RI. What is the NRI of each?

	<u>RI</u>	x	MI	=	<u>NRI</u>
Lessor #1: <u>Leonard</u>	<u>.25</u>		<u>.25</u>		<u>.0625</u>
Lessor #2: <u>Penny</u>	<u>.1875</u>		<u>.25</u>		<u>.046875</u>
Lessor #3: <u>Sheldon</u>	<u>.1250</u>		<u>.25</u>		<u>.031250</u>
Lessor #4: <u>Raj</u>	<u>.1875</u>		<u>.25</u>		<u>.046875</u>
					.1875

<http://youtu.be/Uxi9sheZcHk>

VII. NRI - JOINT OWNERSHIP (UNDIVIDED INTEREST) DIFFERENT RI IN A SPACING UNIT - ANSWER (PAGE 15)

Problem 1: Mike Brady owns 160 acres in the NW/4 of Section 6. When he died, his property passes to his four children, Greg, Peter, Bobby and Cindy who each own a **25%** interest in the **160 acres**. Marshall Drilling seeks to lease the property. Each child signs a separate lease with different royalties. **Greg's** lease contains a **1/4 RI**, **Peter's** lease contains a **3/16 RI**, **Bobby's** contains a **1/8 RI** and Cindy's contains a **1/8 RI**. A well is drilled by Marshall Drilling in a **320** acre drilling and spacing unit. Calculate the Net Revenue Interest of each owner:

	<u>RI</u>	x	<u>MI</u>	x	<u>Tract Acres/Unit Acres</u>	= <u>NRI</u>
Lessor #1 Name: <u>Greg</u>	<u>.2500</u>		<u>.25</u>		<u>160/320 or .50</u>	<u>.0312500</u>
Lessor #2 Name: <u>Peter</u>	<u>.1875</u>		<u>.25</u>		<u>160/320 or .50</u>	<u>.0234375</u>
Lessor #3 Name: <u>Bobby</u>	<u>.1250</u>		<u>.25</u>		<u>160/320 or .50</u>	<u>.0156250</u>
Lessor #4 Name: <u>Cindy</u>	<u>.1250</u>		<u>.25</u>		<u>160/320 or .50</u>	<u>.0156250</u>
						<u>.0859375</u> ✓

<http://youtu.be/wUqopw4hh2o>

Problem 2: Tracy, Liz and Jenna own an equal undivided interest in 80 acres. They lease their land to Rocky Drilling for a 1/8, 3/16 and 1/5 royalty interest respectively. A well is drilled by Rocky Drilling in an 80 acre drilling and spacing unit. What is the NRI of each?

	<u>RI</u>	x	<u>MI</u>	x	<u>Tract Acres/Unit Acres</u>	= <u>NRI</u>
Lessor #1: Tracy	<u>.1250</u>		<u>.3333333</u>		<u>80/80</u>	= <u>.0416667</u>
Lessor #2: Liz	<u>.1875</u>		<u>.3333333</u>		<u>80/80</u>	= <u>.0625000</u>
Lessor #3: Jenna	<u>.2000</u>		<u>.3333334</u>		<u>80/80</u>	= <u>.0666667</u>
						<u>.170833</u> ✓

<http://youtu.be/VFM8KXKCzG0>

Problem 3: Leonard, Penny, Raj and Sheldon each own an equal undivided interest in 480 acres. Each signs a separate lease with Big Bang Drilling. Leonard's lease contains a 1/4 RI, Penny's contains a 3/16 RI, Raj's contains a 1/8 RI and Sheldon's contains a 3/16 royalty interest. A well is drilled by Big Bang Drilling in an 640 acre drilling and spacing unit. What is the NRI of each?

	<u>RI</u>	x	<u>MI</u>	x	<u>Tract Acres/Unit Acres</u>	= <u>NRI</u>
Lessor #1: <u>Leonard</u>	<u>.25</u>		<u>.25</u>		<u>480/640 or .75</u>	<u>=.046875</u>
Lessor #2: <u>Penny</u>	<u>.1875</u>		<u>.25</u>		<u>480/640 or .75</u>	<u>= .03515625</u>
Lessor #3: <u>Raj</u>	<u>.125</u>		<u>.25</u>		<u>480/640 or .75</u>	<u>= .0234375</u>
Lessor #4: <u>Sheldon</u>	<u>.1875</u>		<u>.25</u>		<u>480/640 or .75</u>	<u>= .03515625</u>
						<u>.140625</u> ✓

<http://youtu.be/gspgNK6oWEQ>

VIII. NRI – JOINT OWNERSHIP (UNDIVIDED INTEREST)
DIFFERENT RI IN A SPACING UNIT – DIFFERENT WI
ANSWER (PAGES 17)

Franklin Roosevelt, Gerald Ford, Dwight Eisenhower and Lyndon Johnson own an equal undivided ownership interest in 160 acres in the Presidential Shale. They each lease to different oil and gas companies with different royalty rates:

- **Roosevelt** leases his land to **New Deal** Drilling for a **1/8 RI**
- **Gerald Ford** leases his land to **Pardon** Drilling for a **1/8 RI**
- **Dwight Eisenhower** leases his land to **D-Day** Drilling for a **3/16 RI**
- **Lyndon Johnson** leases his land to **Civil** Drilling for a **3/16 RI**

New Deal, Nixon Drilling, D-Day Drilling and Civil Drilling agree to jointly operate the property and form a **640** acre drilling and spacing unit. What are the interests of the parties? (160/640 = .25)

Lessors:	<u>RI</u>	x	<u>MI</u>	x	<u>Tract/Unit</u>	=	<u>NRI</u>
Lessor #1: FDR	<u>.125</u>		<u>.25</u>		<u>160/640</u>		= .0078125
Lessor #2: Gerald	<u>.125</u>		<u>.25</u>		<u>160/640</u>		= .0078125
Lessor #3: Dwight	<u>.1875</u>		<u>.25</u>		<u>160/640</u>		= .0117188
Lessor #4: LBJ	<u>.1875</u>		<u>.25</u>		<u>160/640</u>		= .0117188
					Total		= .0390625

Part 1: <http://youtu.be/gpk1omyi-NA>

Lessees (WI)	<u>GW</u>	- Burdens	=	<u>NRI</u>
Lessee # 1: <u>ND</u> (1/4 X .25)	<u>.0625</u>	<u>.0078125</u>		= .0546875
Lessee #2: <u>PD</u>	<u>.0625</u>	<u>.0078125</u>		= .0546875
Lessee #3: <u>DD</u>	<u>.0625</u>	<u>.0117188</u>		= .05078125
Lessee #4: <u>CD</u>	<u>.0625</u>	<u>.0117188</u>		= .05078125
				= .2109375

Part 2: <http://youtu.be/9jn30K-3PMM>

Royalty Burden + Leasehold Net

.0390625 + .2109375 = .25 ✓