***Skills* I need to be successful**

1. Rewriting radicals and rational exponents.

$\sqrt[4]{x^7} \rightarrow$ $x^{\frac{2}{9}} \rightarrow$

2. Applying the rules of exponents to simplify expressions. All exponents must be POSITIVE

$(7x^{-4})(-2x^{-3}) \rightarrow$ $\left(x^{2/3}\right)^{-3/5} \rightarrow$ $\frac{3x^5}{6x^{-2}} \rightarrow$

3. Solving equations with rational exponents/radicals. Be able to discern when it is appropriate to use a calculator and when not to.

$x^{4/5} = 16$ $\sqrt[3]{x^2} = 10$

4. Identify a rational and irrational number. Be able to determine closure over sum and product of rational and irrational numbers.

SEE THE CLOSURE ACTIVITY AS WE DID IN CLASS.

5. Add, subtract and multiply polynomials

$(x^3 - 4x) + (x^2 + 4x - 6)$ $(3x+5)(x-7)$

$(x^2 - 4x) - (x^2 - x)$ $(x-2)(x^2+2x-6)$

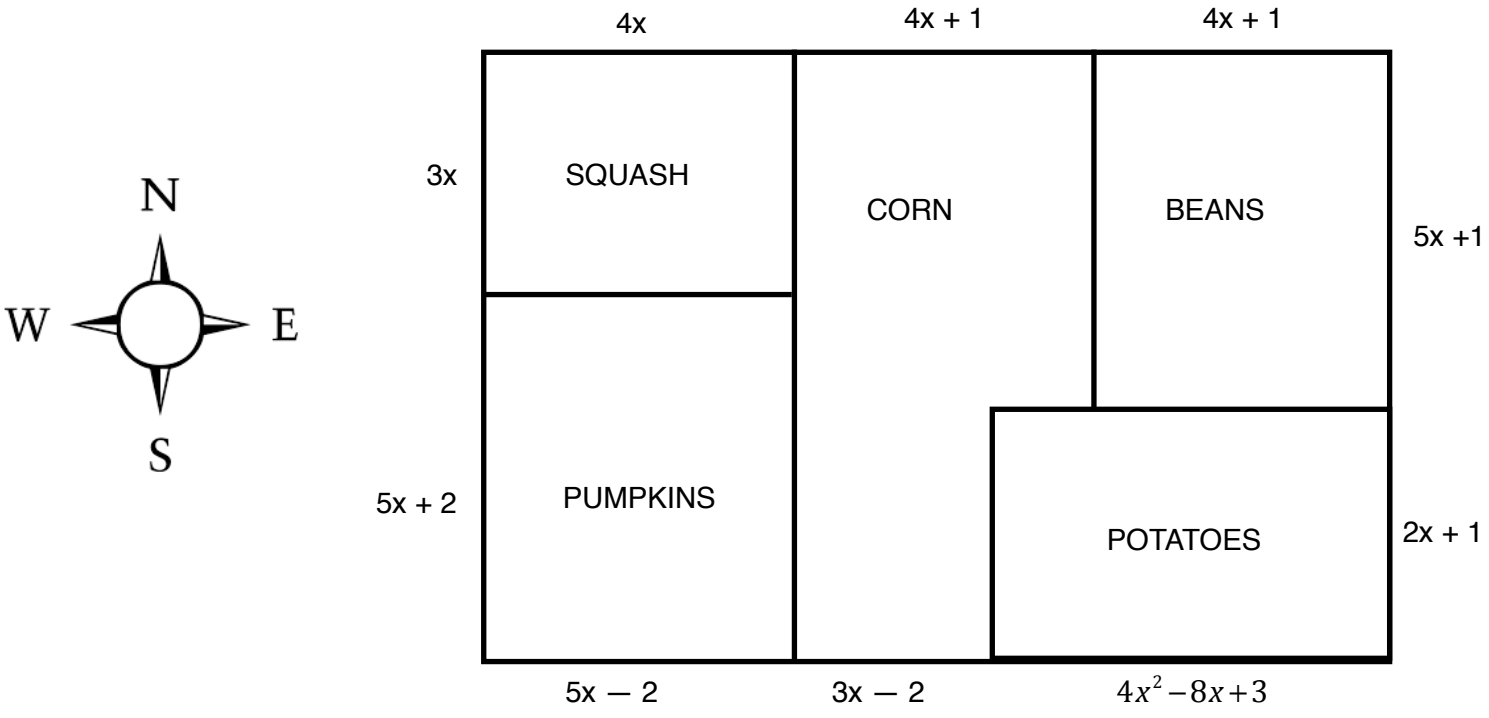
6. *Simplify radicals into complex numbers.*

$\sqrt{-81}$ $\sqrt{-50}$

7. Add, subtract and multiply complex numbers.

$(-3-4i)+(1+3i)$ $(9-i)-(1+i)$ $(2-3i)(1+5i)$

Application **I need to be successful**



Above is the plan for a garden. The sides of each section of the garden are labeled as polynomials. Use the diagram and what you know about polynomial operation to answer the questions below.

1. Write a polynomial expression for the NORTH side of the garden and simplify it. Be sure to put it in standard form.

2. Write a polynomial expression for the perimeter of the POTATO section of the garden and simplify it. Be sure to put it in standard form.

3. Write a polynomial expression for the Area of the BEANS section of the garden and simplify it. Be sure to put it in standard form.

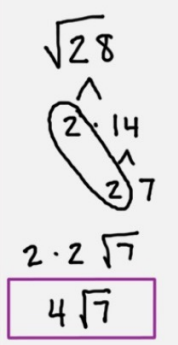
4. What section of the Garden has the Area of $12x^2$?

5. Write an expression for how much more Area the PUMPKINS have than the SQUASH and simplify it. Be sure to put it in standard form.

Analysis **I need to be successful**

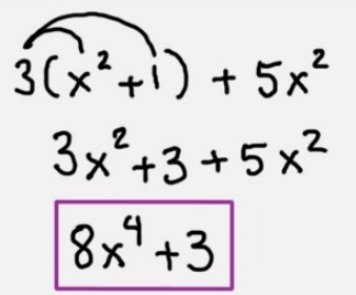
Be able to examine and determine correctness of work. Be able to make suggestions as to how to correct incorrect work.

Evaluate



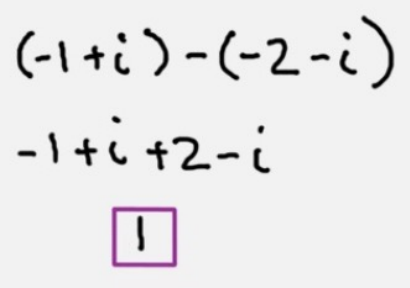
If this is not correct, explain why.

Simplify



If this is not correct, explain why.

Simplify



If this is not correct, explain why.

Writing **I need to be successful**

Be able to explain mathematical concepts in a student voice - based on class activities

Explain the conditions for a number to be IRRATIONAL. Give a numerical example of an irrational number and explain why your example is irrational.

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Explain why $i^2 = -1$ You will want to use the definition of i in your solution.

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