NOVEMBER 10, 2015

UNIT 3: SQUARE ROOTS AND SURFACE AREA

SECTION 1.2:
SQUARE ROOTS OF
NON-PERFECT SQUARES

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MATH 9

WHAT'S THE POINT OF TODAY'S LESSON?

We will continue working on the Math 9 Specific Curriculum Outcome (SCO) "Numbers 4" OR N4 and begin working on "Numbers 6" OR "N6" which state:

N4: "Explain and apply the order of operations, including exponents, with and without technology."

N6: "Determine an approximate square root of positive rational numbers that are non-perfect squares."

What does THAT mean???

For this unit, SCO N4 means that we will learn how to find the square root (the number that was multiplied by itself) of numbers both with and <u>without</u> a calculator.

SCO N6 means that we will use calculators and "benchmarking" to <u>estimate</u> the square root (the number that was multiplied by itself) of non-perfect squares like 15, 7.5 and $\frac{19}{6}$.
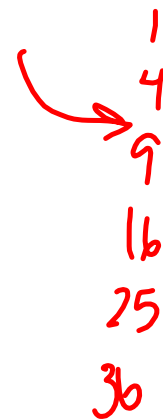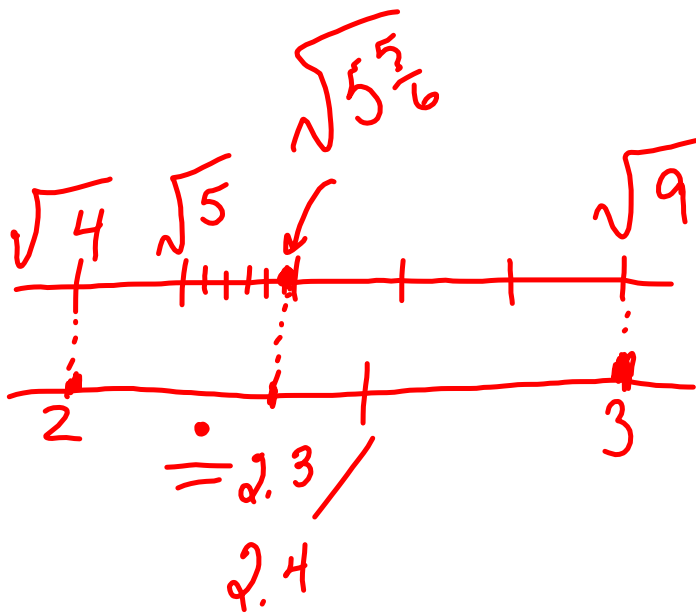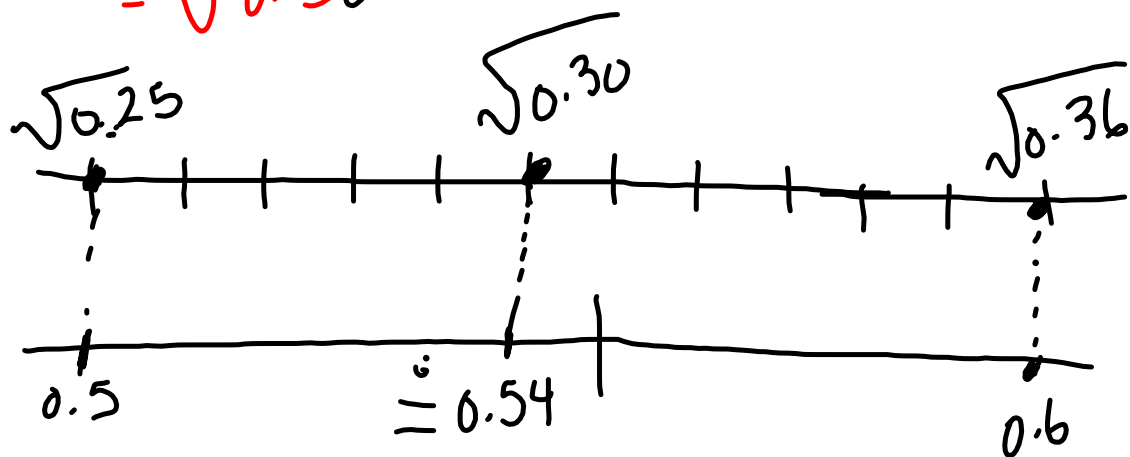
WARM-UP:

Benchmark the square root of 35 / 6.

$$\sqrt{\frac{35}{6}}$$

$$= \sqrt{5\tfrac{5}{6}}$$

$$\sqrt{5\tfrac{5}{6}}$$

$\sqrt{4}$ $\sqrt{5}$ $\sqrt{9}$

2   $\doteq 2.3$ 3

2.4

1
4
9
16
25
36

$$\sqrt{\dfrac{3}{10}}$$

$$=\sqrt{0.30}$$

$\sqrt{0.25}$ $\sqrt{0.30}$ $\sqrt{0.36}$

0.5 $\doteq 0.54$ 0.6

HOMEWORK QUESTIONS?
(pages 18 / 19 / 20, #5, #6abd, #10, #12cd and #20)

5. a) $\sqrt{\dfrac{5}{10}}$

$= \sqrt{0.50}$

$\sqrt{0.49}$ and $\sqrt{0.64}$

$= 0.7$ $= 0.8$

HOMEWORK QUESTIONS?
(pages 18 / 19 / 20, #5, #6abd, #10, #12cd and #20)

c   b   o   a

5. c) $\sqrt{\dfrac{95}{10}}$ $\sqrt{\dfrac{18}{8}}$

        $= \sqrt{\dfrac{19}{2}}$ $= \sqrt{\dfrac{9}{4}}$

        $= \sqrt{9\tfrac{1}{2}}$ $= \dfrac{3}{2}$

        $\sqrt{9}$ $\sqrt{16}$

    $= 3$ $= 4$

6. a) $\sqrt{\dfrac{8}{10}}$

$= \sqrt{0.8\textcolor{red}{0}}$

$\sqrt{0.64}$

$\sqrt{0.80}$ $\sqrt{0.81}$

0.8   0.9
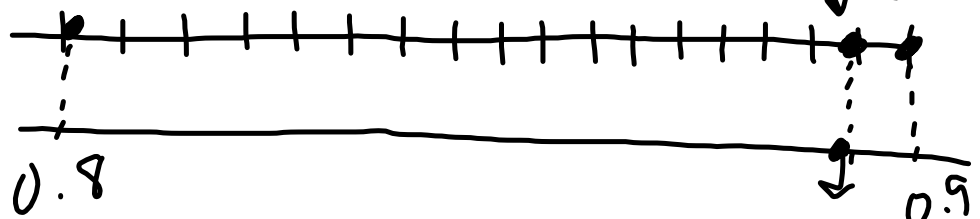
$\doteq 0.89$

$\doteq \dfrac{89}{100}$

10. c)   12 and 13

$12^2 = 144$ $\sqrt{145.3}$

$13^2 = 169$ $\sqrt{160.2}$
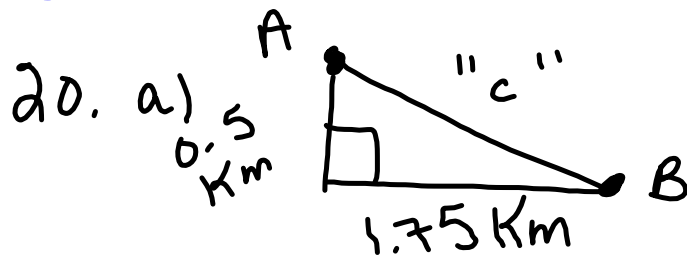
12. c) $\sqrt{\dfrac{13}{4}}$

$= \sqrt{3\frac{1}{4}}$

$\sqrt{1} \qquad \sqrt{3\frac{1}{4}} \; \sqrt{4}$

$\doteq 1.7$

HOMEWORK QUESTIONS?
(pages 18 / 19 / 20, #5, #6abd, #10, #12cd and #20)

12. d) $\sqrt{\dfrac{25}{3}}$

$= \sqrt{8\frac{1}{3}}$

$\sqrt{4}$ $\sqrt{8}$ $\sqrt{9}$

$\doteq 2.9\ 3$

HOMEWORK QUESTIONS?
(pages 18 / 19 / 20, #5, #6abd, #10, #12cd and #20)

20. a)

A

0.5 Km

"c"

1.75 Km

B

$$a^2 + b^2 = c^2$$
$$0.5^2 + 1.75^2 = c^2$$
$$0.25 + .3.0625 = c^2$$
$$\sqrt{3.3125} \approx \sqrt{c^2}$$
$$1.82 Km \approx c$$

MID-UNIT REVIEW:

MMS9
Page 21:   #2 to #11

Try to do the following questions without a calculator:

#2, #3, #4ac, #6, #7abc and #8