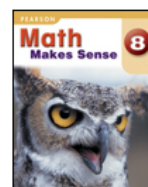


Warm Up Grade 8

Nov. 14, 2017



1) Find the square root of each,

a) 121

$$\sqrt{121} = 11$$

b) 31

$$\sqrt{31}$$

Handwritten diagram showing the prime factorization of 31. A blue arrow points from $\sqrt{31}$ to $\sqrt{25}$ and $\sqrt{36}$. Below $\sqrt{25}$ is a green arrow pointing to the number 5. Below $\sqrt{36}$ is a green arrow pointing to the number 6. A red arrow points from the $\sqrt{31}$ to the number ≈ 5.6 .

2) Prove that 94 is not perfect using factors.

$$1 \times 94$$

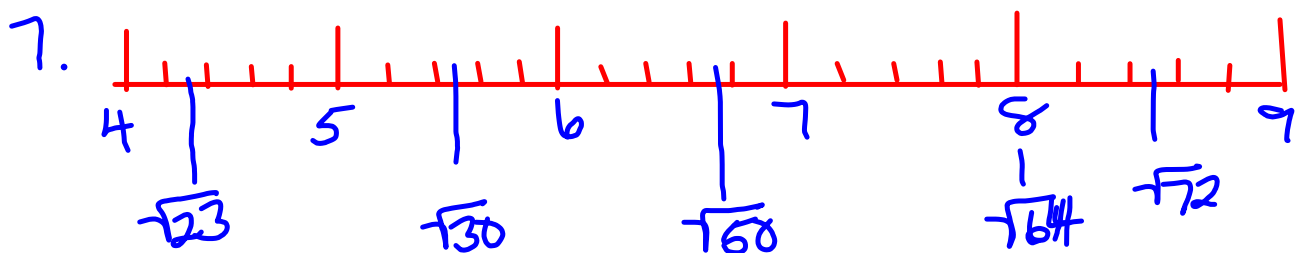
$$2 \times 47$$

4 factors, which is an even # of factor so it is not perfect.

b. $\sqrt{4} = 2$ $\sqrt{9} = 3$

$\sqrt{7} \approx 2.7$

Homework
Solutions



a) The estimates that are good are

$\sqrt{30}$ in the middle between
 $\sqrt{25}$ and $\sqrt{36}$

$\sqrt{64}$ is exactly 8

$\sqrt{72}$ is in the middle between
 $\sqrt{64}$ and $\sqrt{81}$

b) $\sqrt{23}$ should be closer to 5 than 4
 $\sqrt{50}$ should be greater than 7

Homework
Solutions

a) $\sqrt{11}$
 $\sqrt{9}$ $\sqrt{16}$
 3 4
 $\sqrt{11} \approx 3.2$

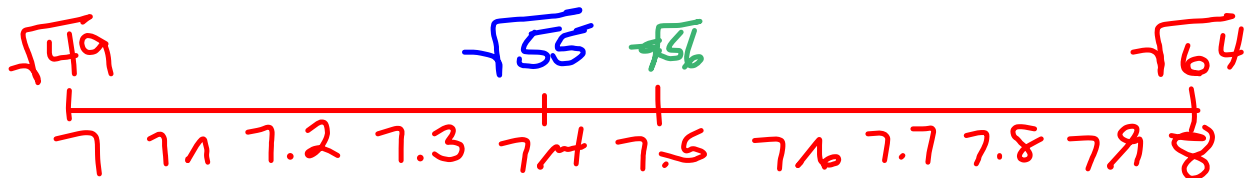
Perfect Squares	
1	4
9	16
25	36
49	64
81	100
121	144
169	196
225	

b) $\sqrt{40}$
 $\sqrt{36}$ $\sqrt{49}$
 6 7
 $\sqrt{40} \approx 6.3$

c) $\sqrt{30}$
 $\sqrt{25}$ $\sqrt{36}$
 5 6
 $\sqrt{30} \approx 5.5$

d) $\sqrt{55}$
 $\sqrt{49}$ $\sqrt{64}$
 7 8
 $\sqrt{55} \approx 7.4$

Middle between
49 and 64
 ≈ 56



Homework Solutions

9. $7, \sqrt{14}$

$$\sqrt{16} = 4, \text{ so } \sqrt{14} < 7$$

b) $8, \sqrt{60}$

$$8^2 = 64, \text{ so } \sqrt{60} < 8$$

c) $11, \sqrt{121}$

$$11^2 = 121, \text{ so } \sqrt{121} = 11$$

d) $12, \sqrt{150}$

$$\sqrt{144} = 12, \text{ so } \sqrt{150} > 12$$

10 a)

$$\begin{array}{r} \sqrt{58} \\ \sqrt{49} \quad \sqrt{64} \\ 7 \quad \quad 8 \\ \sqrt{58} \approx 7.8 \end{array}$$

b)

$$\begin{array}{r} \sqrt{70} \\ \sqrt{64} \quad \sqrt{81} \\ 8 \quad \quad 9 \\ \sqrt{70} \approx 8.3 \end{array}$$

c)

$$\begin{array}{r} \sqrt{90} \\ \sqrt{81} \quad \sqrt{100} \\ 9 \quad \quad 10 \\ \sqrt{90} \approx 9.5 \end{array}$$

d)

$$\begin{array}{r} \sqrt{151} \\ \sqrt{144} \quad \sqrt{169} \\ 12 \quad \quad 13 \\ \sqrt{151} \approx 12.2 \end{array}$$

Perfect Squares

1	4
9	16
25	36
49	64
81	100
121	144
169	196
225	

11. a) $\sqrt{17}$ is between 16 and 18

False

$\sqrt{17}$ is between 4 ($\sqrt{16}$) and 5 ($\sqrt{25}$)

Homework

Solutions

b) $\sqrt{5} + \sqrt{5} = \sqrt{10}$

$$\sqrt{5} \approx 2.2$$

$$\sqrt{4} = 2$$

$$\sqrt{9} = 3$$

$$\sqrt{10} \approx 3.2$$

$$\sqrt{9} = 3$$

$$\sqrt{16} = 4$$

Is $2.2 + 2.2 = 3.2$, NO

so False $\sqrt{5} + \sqrt{5}$ does not equal $\sqrt{10}$

c) $\sqrt{13}$ is between 11 and 12

True

$$\sqrt{121} = 11 \quad \text{and} \quad \sqrt{144} = 12$$

and 13 is between 121 and 144

Mid-Unit Review

Page 30
1) List factors
15
1x15 Rect
3x5 Rect
No repeats
So
Not
perfect

#1
#2
#3
#5
#7
#9
#10
#11

Quiz

Tomorrow

No

calculators

MUST study
perfect
squares