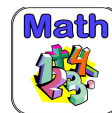


Warm Up Grade 8

Wednesday, Nov. 9



Prime Numbers:
2,3,5,7,11,13,17,19,23,29,31,...

Quiz
Tomorrow

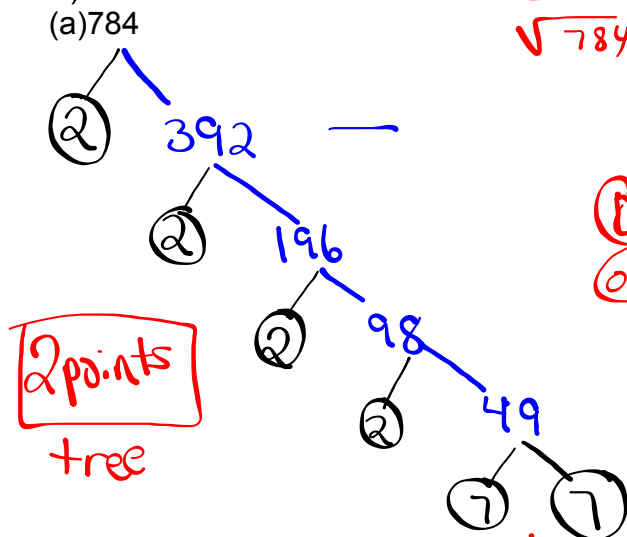
Perfect squares:
1,4,9,16,25,36,49,64,81,100,121,144,169,196,225

1) Use product of perfect squares to find the square root of the following:
(a) 4225

$$\begin{aligned} \sqrt{4225} &= \sqrt{169 \times 25} \\ &= \sqrt{169} \times \sqrt{25} \\ &= 13 \times 5 \\ &= 65 \end{aligned}$$

$$\sqrt{169} = 13$$

2) Use product of PRIMES to find the square root of the following: (Factor Tree)



$$\begin{aligned} \sqrt{784} &= \sqrt{(2 \times 2) \times (2 \times 2) \times (7 \times 7)} \\ &= \sqrt{(2 \times 2)} \times \sqrt{(2 \times 2)} \times \sqrt{(7 \times 7)} \\ &= 2 \times 2 \times 7 \\ &= 28 \end{aligned}$$

3) Square 81 (SHOW WORK YOU DO ON CALCULATOR)

$$81^2 = 6561 \quad \text{OR} \quad 81^2 = \boxed{81 \times 81} = 6561$$

how to show work

4) Find the square root of 676 (SHOW WORK YOU DO ON CALCULATOR)

$$\sqrt{676} = 26$$

Rule

$$\sqrt{x^2} = \sqrt{x \cdot x} = x$$

$$\text{Ex) } \sqrt{15^2} = \sqrt{15 \times 15} = 15$$

$$\sqrt{a^2} = a$$

$$\sqrt{225}$$

Homework Solutions

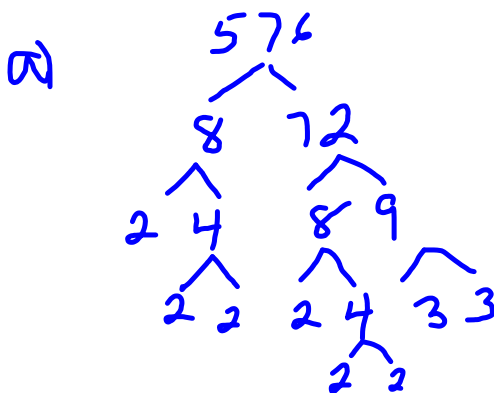
2. Find the square root of the following, using prime factorization:

(a) $\sqrt{576}$

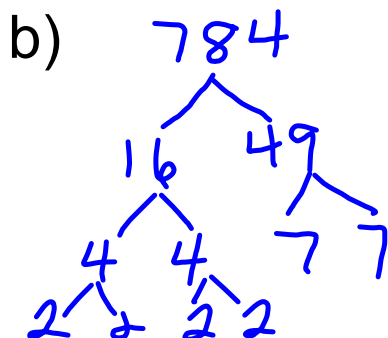
(b) $\sqrt{784}$

(c) $\sqrt{2025}$

(d) $\sqrt{304}$



$$\begin{aligned}\sqrt{576} &= \sqrt{(2 \times 2) \times (2 \times 2) \times (2 \times 2) \times (3 \times 3)} \\ &= 2 \times 2 \times 2 \times 3 \\ &= 24\end{aligned}$$



$$\begin{aligned}784 &= 2 \times 2 \times 2 \times 2 \times 7 \times 7 \\ \sqrt{784} &= \sqrt{(2 \times 2) \times (2 \times 2) \times (7 \times 7)} \\ &= 2 \times 2 \times 7 \\ &= 28\end{aligned}$$

Homework solution from Oct. 30

1. Use the product of perfect squares to find the following square roots:

(a) $\sqrt{1296}$

(b) $\sqrt{1089}$

(c) $\sqrt{1764}$

(d) $\sqrt{9216}$

2. Find the square root of the following, using prime factorizaion:

(a) $\sqrt{576}$

(b) $\sqrt{784}$

(c) $\sqrt{2025}$

(d) $\sqrt{2504}$

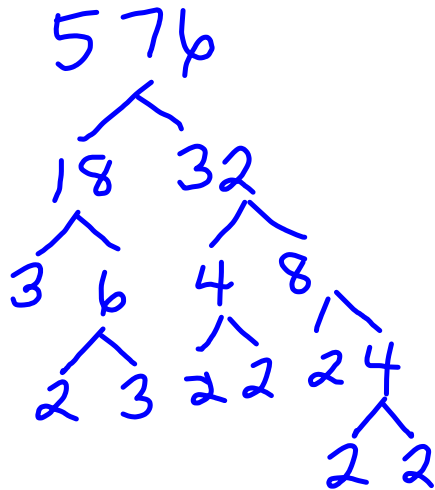
$$\begin{aligned} \text{1a)} \quad \sqrt{1296} &= \sqrt{36} \times \sqrt{36} \\ &= 6 \times 6 \\ &= 36 \end{aligned}$$

$$\begin{aligned} \text{b)} \quad \sqrt{1089} &= \sqrt{121} \times \sqrt{9} \\ &= 11 \times 3 \\ &= 33 \end{aligned}$$

$$\begin{aligned} \text{or} \quad &= \sqrt{9} \times \sqrt{144} \\ &\quad 3 \times 12 \\ &\quad 36 \end{aligned}$$

$$\begin{aligned} \text{c)} \quad \sqrt{1764} &= \sqrt{36} \times \sqrt{49} \\ &= 6 \times 7 \\ &= 42 \end{aligned}$$

$$\begin{aligned} \text{d)} \quad \sqrt{9216} &= \sqrt{144} \times \sqrt{64} \\ &= 12 \times 8 \\ &= 96 \end{aligned}$$

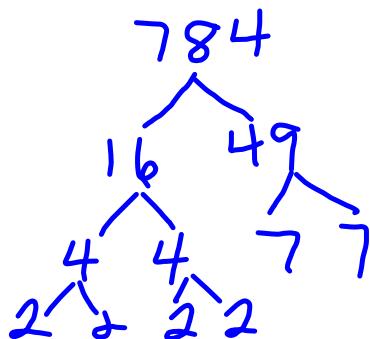


$$576 = 2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 3 \times 3$$

$$\sqrt{576} = \sqrt{(2 \times 2)(2 \times 2)(2 \times 2)(3 \times 3)}$$

$$= 2 \times 2 \times 2 \times 3$$

$$= 24$$



$$784 = 2 \times 2 \times 2 \times 2 \times 7 \times 7$$

$$\sqrt{784} = \sqrt{(2 \times 2)(2 \times 2)(7 \times 7)}$$

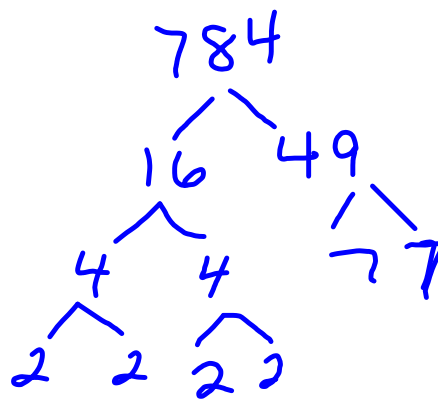
$$= 2 \times 2 \times 7$$

$$= 28$$

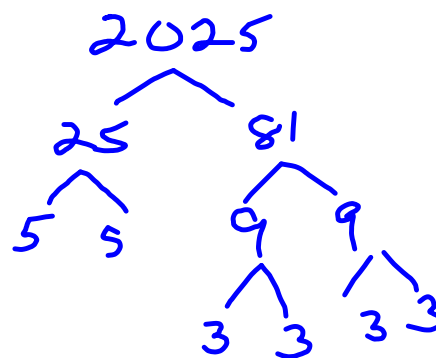
2025

2304

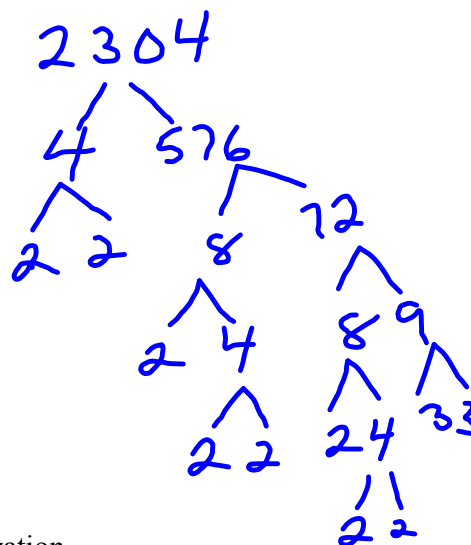
$$\begin{aligned}
 & b) \sqrt{784} \\
 & = \sqrt{(2 \times 2) \times (2 \times 2) \times (7 \times 7)} \\
 & = 2 \times 2 \times 7 \\
 & = 28
 \end{aligned}$$



$$\begin{aligned}
 & c) \sqrt{2025} \\
 & = \sqrt{(5 \times 5) \times (3 \times 3) \times (3 \times 3)} \\
 & = 5 \times 3 \times 3 \\
 & = 45
 \end{aligned}$$



$$\begin{aligned}
 & d) \sqrt{2304} \\
 & = \sqrt{(2 \times 2) \times (2 \times 2) \times (2 \times 2) \times (2 \times 2) \times (3 \times 3)} \\
 & = 2 \times 2 \times 2 \times 2 \times 3 \\
 & = 48
 \end{aligned}$$



1. Find the square root of the following, using prime factorization.

(a) $\sqrt{729}$

(b) $\sqrt{8025}$

(c) $\sqrt{1225}$

(d) $\sqrt{1764}$

(e) $\sqrt{576}$

(f) $\sqrt{1296}$

2. Use the product of perfect squares to find the following square roots:

(a) $\sqrt{1296}$

(b) $\sqrt{1089}$

(c) $\sqrt{764}$

(d) $\sqrt{9216}$

have from last day

Prime numbers are numbers that are only divisible by 1 and itself

2, 3, 5, 7, 11, 13, 17, 19, 23, 29,...

Now find the 5184, using each method below:

- (a) product of perfect squares
- (b) prime factorization
- (c) Factors

a) product of perfect squares

HW

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

b) prime factorization

5184


Now find the 1600, using each method below:
(a) product of perfect squares
(b) prime factorization

HW

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



Similar to warm up

Find Square root Using Product of 2 perfect squares

Find Square root Using Prime Factorization

QUIZ TOMORROW

Homework (Grade 8) Gr. 8 you try more practice

1. Use the product of perfect squares to find the following square roots:

(c) $\sqrt{7056}$

2. Find the square root of the following, using prime factorizaion:

(a) $\sqrt{1444}$

(b) $\sqrt{784}$

(c) $\sqrt{2025}$

(d) $\sqrt{2304}$

Prime Numbers:

2,3,5,7,11,13,17,19,23,29,31,...

Perfect squares:

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

1. Use the product of perfect squares to find the following square roots:

(a) $\sqrt{5929}$

$$= \sqrt{121} \times \sqrt{49}$$

$$= 11 \times 7$$

$$= 77$$

$$\sqrt{5929} = 77$$

(b) $\sqrt{576}$

$$= \sqrt{144} \times \sqrt{4}$$

$$= 12 \times 2$$

$$= 24$$

$$\sqrt{576} = 24$$

(c) $\sqrt{7056}$

$$= \sqrt{196} \times \sqrt{36}$$

$$= 14 \times 6$$

$$= 84$$

$$\sqrt{7056} = 84$$