

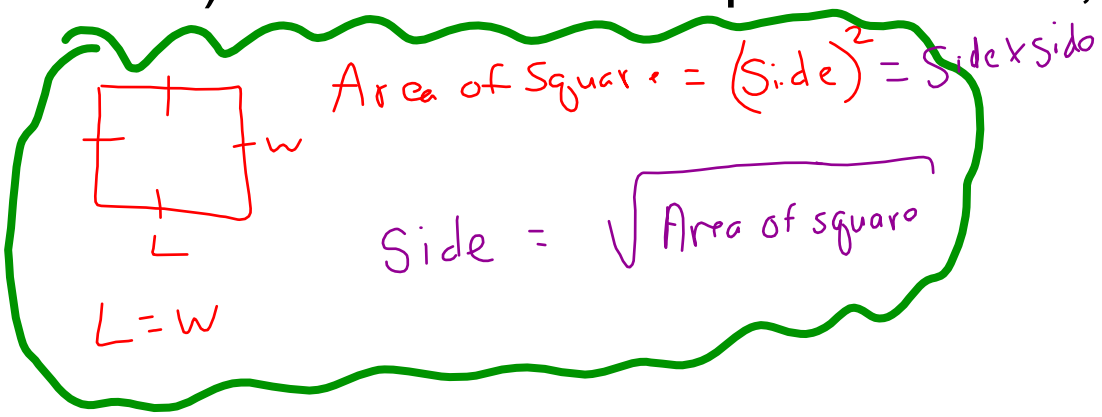
Warm Up

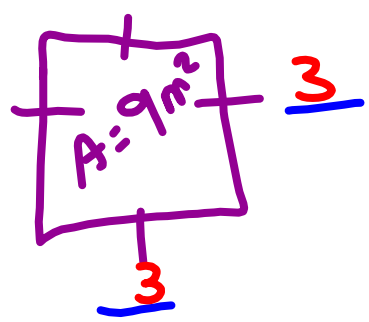
grade 8

Answer on next slide



1) If the area of a square is 9 m^2, what is the side length?



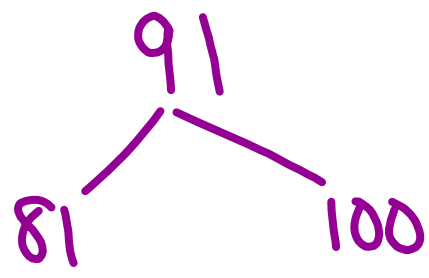


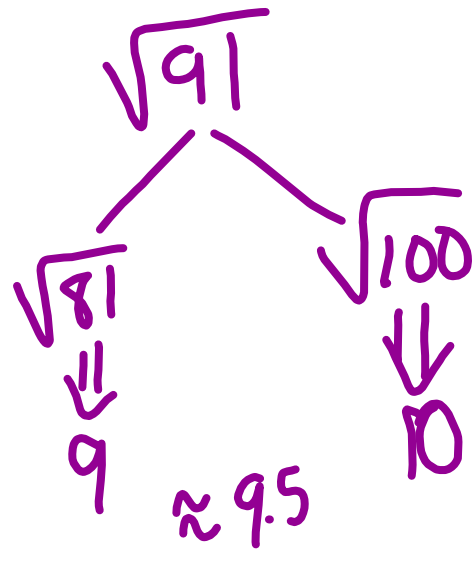
Area = (Side)²

$9m^2 = (3)^2$

Side = 3

2) 91 is not a perfect square number but which two consecutive square numbers is it between?





exponent

$\wedge$

x^y

y^x

$\square^{\square}$

Square button

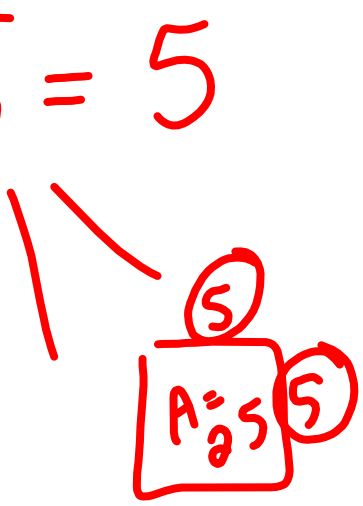
x^2

5^2

$5 \times 5 = 25$

$\sqrt{\square}$

$\sqrt{25} = 5$



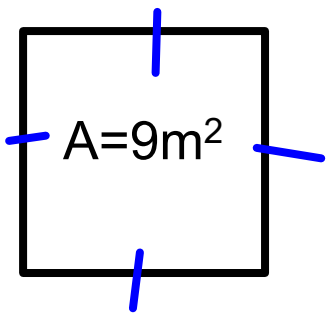


Warm Up

grade 8



1) If the area of a square is 9 m^2, what is the side length?



All sides of a square are the same length.

A= L x W but L=W

9 = __ x __

so

9 = 3 x 3

Side = 3 m

2) 91 is not a perfect square number but which two consecutive square numbers is it between?

perfect square numbers

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

91 is between 81 & 100

Class/Homework

Page 8 (Textbook)

4, #5, #6 (don't use tiles sketch rectangles),
#9 (Use graph paper),
#10 (a,b,c, d JUST sketch)
#11,
#12
#15
#16,
#17
#18 (Use cal)
#19,
#20

(if you don't have graph paper write out factors)

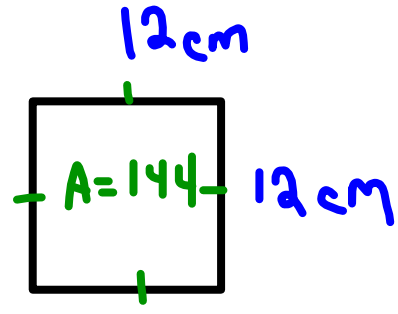
4a) A = 4
side = 2

b) A = 1 ← "x"
S = 1

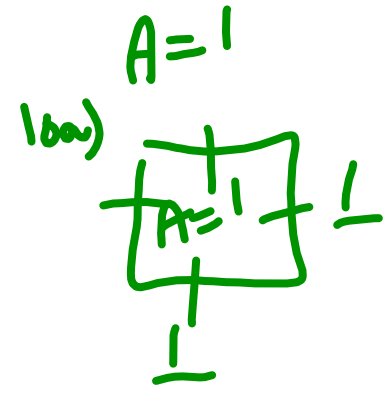
1x —
2x —

5a) side = 8 units
Area = (side)^2
= side x side
= 8 x 8
= 64 units^2

10b)



10a)

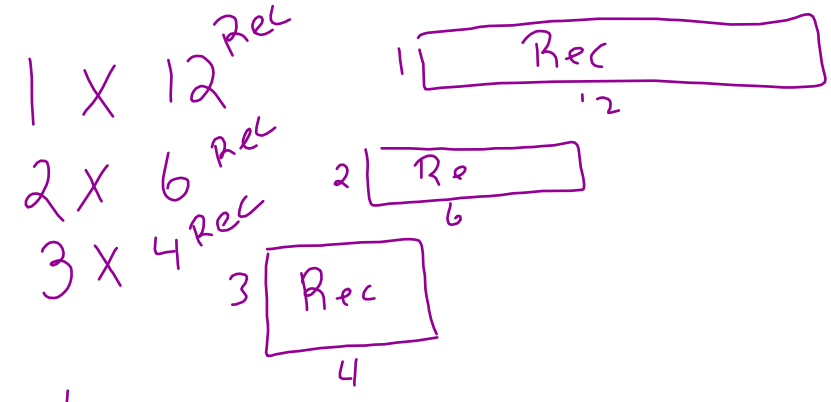


12

1 X 12 Rec

2 X 6 Rec

3 X 4 Rec



Not a square

15. These numbers are not square numbers.
Which two consecutive square numbers is each number between?
Describe the strategy you used.

a) 12 **b)** 40 **c)** 75 **d)** 200

16. The floor of a large square room has area 144 m^2.

a) Find the length of a side of the room.

b) How much baseboard is needed to go around the room?

c) Each piece of baseboard is 2.5 m long.
How many pieces of baseboard are needed?
What assumptions do you make?

17. A garden has area 400 m^2.
The garden is divided into 16 congruent square plots.
Sketch a diagram of the garden.
What is the side length of each plo

18. **Assessment Focus** Which whole numbers between 50 and 200 are perfect squares?
Explain how you know.

19. Lee is planning to fence a square kennel for her dog.
Its area must be less than 60 m^2.

a) Sketch a diagram of the kennel.

b) What is the kennel's greatest possible area?

c) Find the side length of the kennel.

d) How much fencing is needed?

e) One metre of fencing costs $10.00. What is the cost of the fencing? What assumptions do you make?

20. **Take It Further** Devon has a piece of poster board 45 cm by 20 cm.
His teacher challenges him to cut the board into parts, then rearrange the parts to form a square.

a) What is the side length of the square?

b) What are the fewest cuts Devon could have made? Explain.

21. **Take It Further** The digital root of a number is the result of adding the digits of the number until a single-digit number is reached.
For example, to find the digital root of 147:
$1 + 4 + 7 = 12$ and $1 + 2 = 3$

a) Find the digital roots of the first 15 square numbers.
What do you notice?

b) What can you say about the digital root of a square number?

c) Use your results in part b.
Which of these numbers might be square numbers?

i) 440 **ii)** 2809 **iii)** 3008
iv) 4225 **v)** 625