Math 8

Lesson 51 Practice

Name: KEY

Squares and Square Roots

Instructions: Find the square root or square of each integer.

Developing

$\sqrt{121} = 11$ $\sqrt{169} = 13$ $\sqrt{100} = 10$ $\sqrt{225} = 15$

$\sqrt{49} = 7$ $\sqrt{144} = 12$ $\sqrt{4} = 2$ $\sqrt{1} = 1$

$\sqrt{196} = 14$ $\sqrt{9} = 3$ $\sqrt{25} = 5$ $\sqrt{36} = 6$

$\sqrt{256} = 16$ $\sqrt{81} = 9$ $\sqrt{64} = 8$ $\sqrt{16} = 4$

$8^2 = 64$ $6^2 = 36$ $11^2 = 121$ $14^2 = 196$

$3^2 = 9$ $12^2 = 144$ $13^2 = 169$ $7^2 = 49$

$1^2 = 1$ $10^2 = 100$ $2^2 = 4$ $9^2 = 81$

$4^2 = 16$ $16^2 = 256$ $5^2 = 25$ $15^2 = 225$

Name : _____

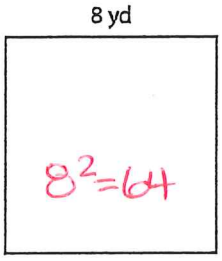
T1L1S1

Area of a Square

Developing

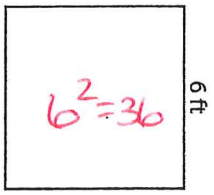
Find the area of each square.

1)



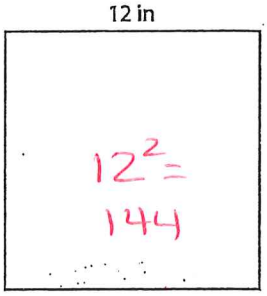
Area = $64\ yd^2$

2)



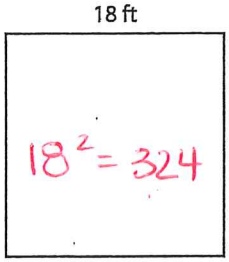
Area = $36\ ft^2$

3)



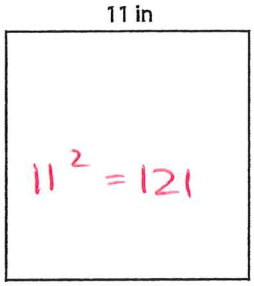
Area = $144\ in^2$

4)



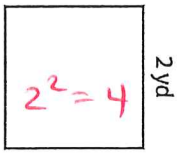
Area = $324\ ft^2$

5)



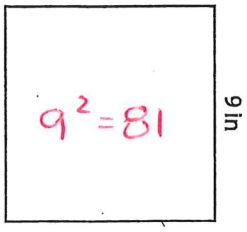
Area = $121\ in^2$

6)



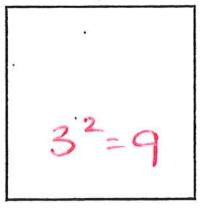
Area = $4\ yd^2$

7)



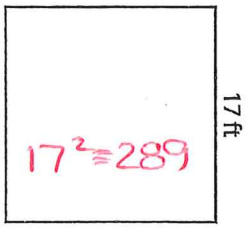
Area = $81\ in^2$

8)



Area = $9\ yd^2$

9)



Area = $289\ ft^2$

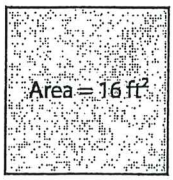
Name : _____

Developing

Area of a Square

Sheet 1

Example :



Area = Side x Side

$16\ ft^2 = Side^2$

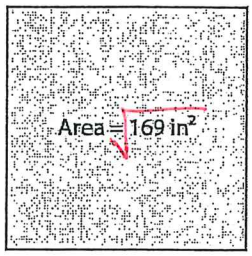
$\sqrt{16} = Side$

Side = **4 ft**

Ans = 4 ft

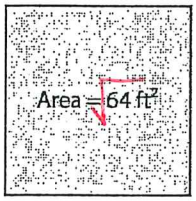
Find the side length of each square.

1)



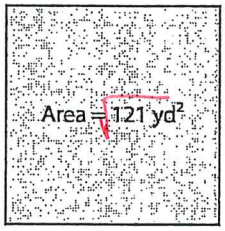
Side length = 13 in

2)



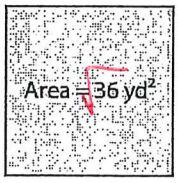
Side length = 8 ft

3)



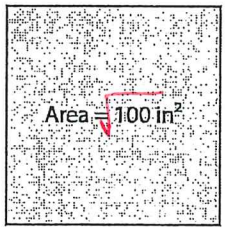
Side length = 11 yd

4)



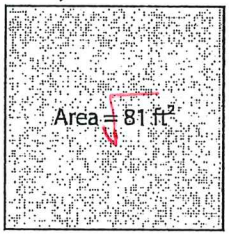
Side length = 6 yd

5)



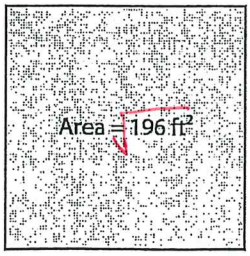
Side length = 10 in

6)



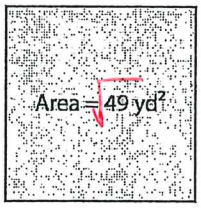
Side length = 9 ft

7)



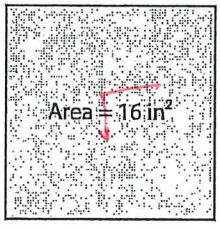
Side length = 14 ft

8)



Side length = 7 yd

9)



Side length = 4 in

Common Squares and Square Roots

Proficient

Calculate the square or principal (positive) square root of each number.

$10^2 =$ 100 $30^2 =$ 900 $50^2 =$ 2500

$\sqrt{625} =$ 25 $\sqrt{25} =$ 5 $\sqrt{8100} =$ 90

$70^2 =$ 4900 $\sqrt{169} =$ 13 $\sqrt{4} =$ 2

$4^2 =$ 16 $\sqrt{64} =$ 8 $15^2 =$ 225

$40^2 =$ 1600 $6^2 =$ 36 $1^2 =$ 1

$80^2 =$ 6400 $\sqrt{196} =$ 14 $60^2 =$ 3600

$\sqrt{81} =$ 9 $7^2 =$ 49 $11^2 =$ 121

$\sqrt{144} =$ 12 $\sqrt{9} =$ 3 $20^2 =$ 400

Score: /24

Name : _____

Area of a Square

T2L2S5

Proficient

A) Find the area of each square for the given side length.

1) Side length = 25 in

25^2

Area = 625 in^2

2) Side length = 62 yd

62^2

Area = 3844 yd

3) Side length = 19 yd

19^2

Area = 361 yd^2

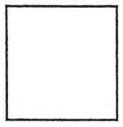
4) Side length = 36 ft

36^2

Area = 1296 ft^2

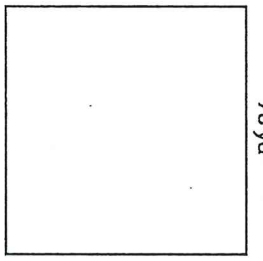
B) Find the area of each square.

5)



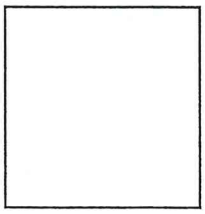
Area = 2916 in^2

6)



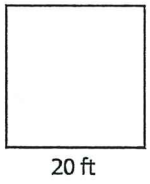
Area = 6084 yd^2

7)



Area = 1369 ft^2

8)



Area = 400 ft^2

9) The length of the side of a square is 83 inches. What is the area of the square?

6889 in^2

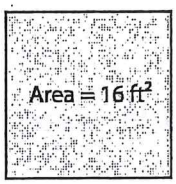
Name : _____

Proficient

Area of a Square

Sheet 4

Example :



Area = Side x Side

$16\ ft^2 = Side^2$

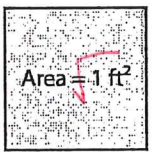
$\sqrt{16} = Side$

Side = **4 ft**

Ans = 4 ft

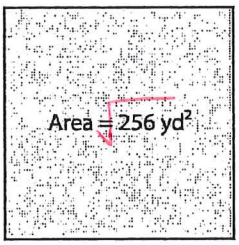
Find the side length of each square.

1)



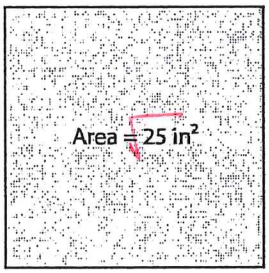
Side length = 1 ft

2)



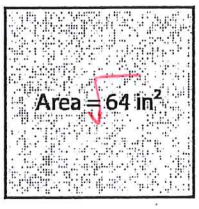
Side length = 16 yd

3)



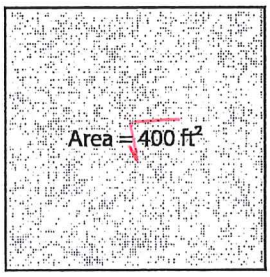
Side length = 5 in

4)



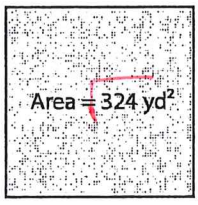
Side length = 8 in

5)



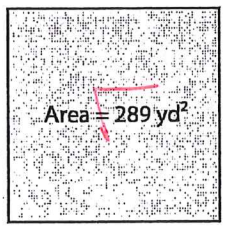
Side length = 20 ft

6)



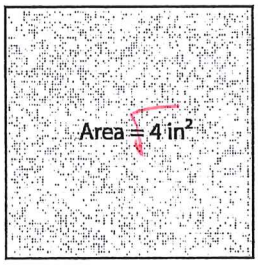
Side length = 18 yd

7)



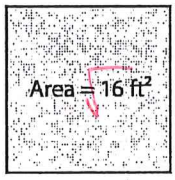
Side length = 17 yd

8)



Side length = 2 in

9)



Side length = 4 ft

Name : _____

Lesson 51 Practice

Name: _____

Squaring Numbers

Extending

A) Find the values of the following.

1) $(-1)^2$

$(-1)(-1)$

1

2) 43^2

$43 \times 43 = 129 + 1720 = 1849$

1849

3) 34^2

$34 \times 34 = 136 + 1020 = 1156$

1156

4) $(-14)^2$

196

5) 27^2

$27 \times 27 = 189 + 540 = 729$

729

6) $(-38)^2$

$38 \times 38 = 304 + 1140 = 1444$

1444

B) Find the squares of the following numerals.

1) $(-31)^2$

$31 \times 31 = 31 + 930 = 961$

961

2) 46^2

$46 \times 46 = 276 + 1840 = 2116$

2116

3) $(-25)^2$

625

4) 18^2

324

5) $(-33)^2$

$33 \times 33 = 99 + 990 = 1089$

1089

6) 8^2

64

C) 1) Which of the following is the square of 14?

i) 169 ii) 196 iii) −196 iv) 28

2) Which of the following is equal to $(-40)^2$?

i) −1,600 ii) 1,680 iii) 1,600 iv) 800

Extending

Area of a Square

T2S1

A) Find the area of each square for the given side length.

1) Side length = $\left(\frac{5}{2}\right)^2$ yd

Area = $\frac{25}{4}$ yd^2

2) Side length = $2\frac{1}{3}$ in $\left(\frac{7}{3}\right)^2 = \frac{49}{9}$

Area = $\frac{49}{9}$ in^2

3) Side length = $\left(\frac{1}{6}\right)^2$ in

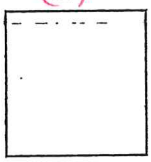
Area = $\frac{1}{36}$ in^2

4) Side length = $3\frac{3}{4}$ ft $\left(\frac{15}{4}\right)^2 = \frac{225}{16}$

Area = $\frac{225}{16}$ ft^2

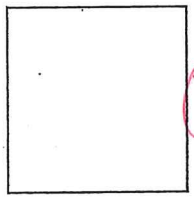
B) Find the area of each square.

5) $\left(\frac{7}{2}\right)^2$ ft



Area = $\frac{49}{4}$ ft^2

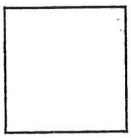
6)



$\left(\frac{10}{3}\right)^2$ yd

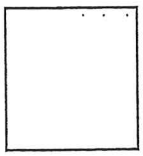
Area = $\frac{100}{9}$ yd^2

7) $\left(\frac{3}{5}\right)^2$ yd



Area = $\frac{9}{25}$ yd^2

8)



$1\frac{2}{7}$ in $\left(\frac{9}{7}\right)^2$

Area = $\frac{81}{49}$ in^2

9) If the side of a square measures $\left(\frac{8}{9}\right)^2$ foot, determine the area.

$\frac{64}{81}$ ft^2

Extending

Area of a Square

T2S1

A) Find the area of each square for the given side length.

1) Side length = 3.5 yd

3.5^2

21
35
3.5
175
1050
1225

Area = 12.25 yd^2

2) Side length = 7.3 in

2
7.3
x 7.3
219
5110
5329

Area = 53.29 in^2

3) Side length = 11.1 in

11.1
x 11.1
111
1110
11100
123 21

Area = 123.21 in^2

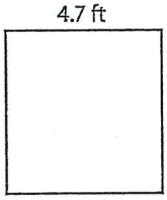
4) Side length = 18.6 ft

64
18.6
x 18.6
1116
14880
18600
34596

Area = 345.96 ft^2

B) Find the area of each square.

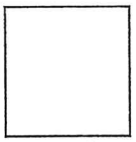
5)



2
4.7
x 4.7
329
1880
2209

Area = 22.09 ft^2

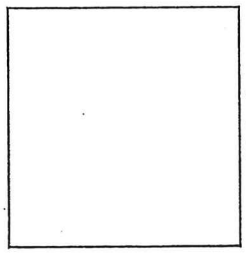
6)



2
6.4
x 6.4
256
3840
4096

Area = 40.96 yd^2

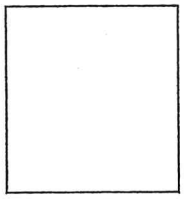
7)



1 2
38
13.9
x 13.9
1251
4170
13900
19321

Area = 193.21 yd^2

8)



6
10.8
x 10.8
1864
10800
11664

Area = 116.64 in^2

9) If the side of a square measures 19.5 feet, determine the area.

380.25 ft^2

8 4
19.5
x 19.5
1 2 1 975
17550
19500
38025