

Squares and Square Roots

To find the length when you are given the area...

- Square root the Area $\rightarrow \sqrt{\quad}$ - calculator button

$$\sqrt{\text{Area}} = \text{length.}$$

- If the area of a square is 12 m^2 , what is the length of the square?

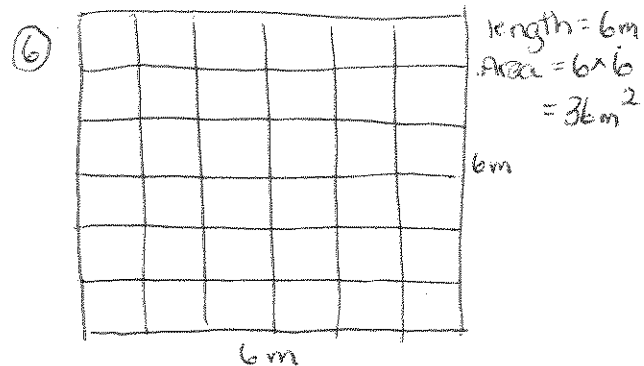
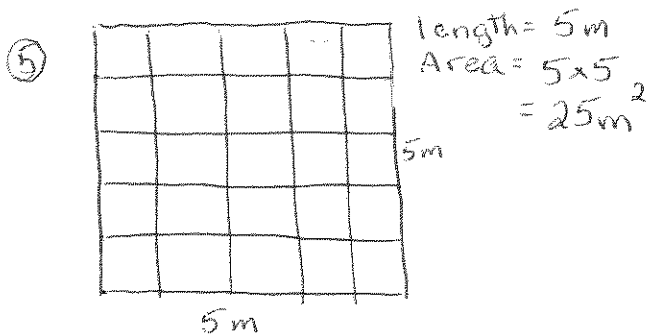
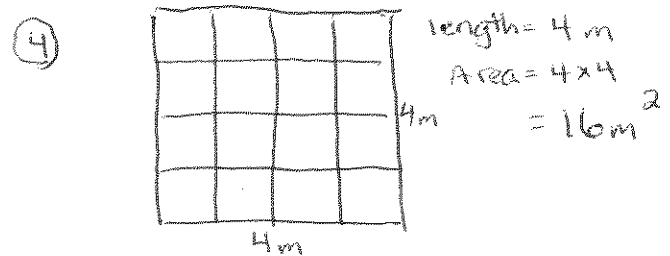
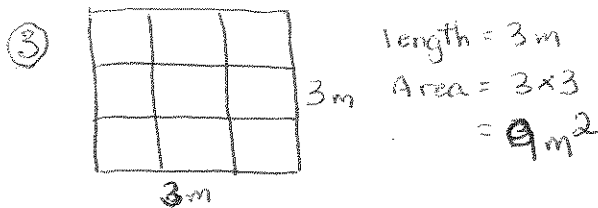
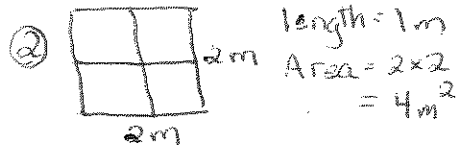
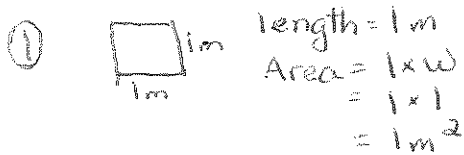
$$\sqrt{12 \text{ m}^2} = 3.5 \text{ m}$$

Perfect Squares (memorize these)

	Area	Length
	1	1
* These numbers are perfect squares because their area is a square.	4	2
	9	3
	16	4
	25	5
	36	6
	49	7
	64	8
	81	9
	100	10
	121	11
	144	12
	169	13
196	14	
225	15	

Squares and Square Roots

Patio Building



Estimating Square Roots

Number	Between	Closer to	Estimated	Actual
① 8	$\sqrt{4}$ and $\sqrt{9}$ 2 and 3	$\sqrt{9}$ 3	2.8	2.83
② 14	$\sqrt{9}$ and $\sqrt{16}$ 3 and 4	$\sqrt{16}$ 4	3.7	3.74
③ 27	$\sqrt{25}$ and $\sqrt{36}$ 5 and 6	$\sqrt{25}$ 5	5.3	5.2
④ 42	$\sqrt{36}$ and $\sqrt{49}$ 6 and 7	$\sqrt{36}$ 6	6.4	6.48
⑤ 61	$\sqrt{49}$ and $\sqrt{64}$ 7 and 8	$\sqrt{64}$ 8	7.7	7.81
⑥ 98	$\sqrt{81}$ and $\sqrt{100}$ 9 10	$\sqrt{100}$ 10	9.83	9.89
149	$\sqrt{144}$ and $\sqrt{169}$ 12 13	$\sqrt{144}$ 12	12.32	12.21
181	$\sqrt{169}$ and $\sqrt{196}$ 13 and 14	$\sqrt{196}$ 14	13.65	13.56

6 12 7
36 49

61 3
49 64

186
184
12