Roots of positive numbers

H

1 Calculate the squares.

a) $4^2 =$ ☐ $(-4)^2 =$ ☐ $-4^2 =$ ☐

b) $7^2 =$ ☐ $-7^2 =$ ☐ $(-7)^2 =$ ☐

c) $0^2 =$ ☐

2 Write the numbers in the correct place in the sorting table.

71 2 4 –8 –81 10

49 –16 200 –50 –25 169

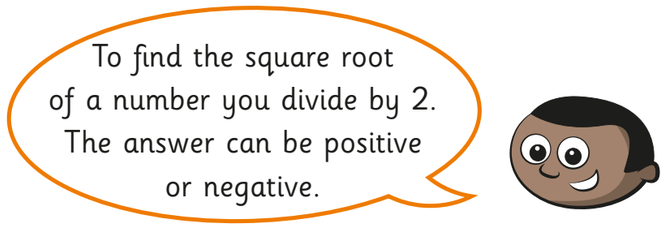
	Square number	Not a square number
Positive number		
Negative number		

What do you notice?

_____

_____

3 Mo is finding the square root of 64



Here is his working out.

$64 \div 2 = 32$

$\sqrt{64} = 32$

Is Mo correct? _____

Explain your answer.

_____

4 We know that $6^2 = 36$ and $(-6)^2 = 36$

So we also know that if $x^2 = 36$ then $x = 6$ and $x = -6$

Solve the equations.

a) $x^2 = 25$ $x =$ ☐ and $x =$ ☐

b) $x^2 = 1$ $x =$ ☐ and $x =$ ☐

c) $x^2 = 121$ $x =$ ☐ and $x =$ ☐

d) $x^2 = 4$ $x =$ ☐ and $x =$ ☐

e) $x^2 = 9{,}000{,}000$ $x =$ ☐ and $x =$ ☐

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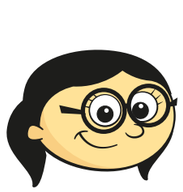
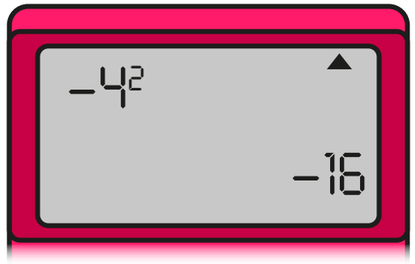
5 Use a calculator to help you solve $y^2 = 75$

$y =$ ☐ and $y =$ ☐

6 Annie thinks that –16 is a square number.



When I put -4^2 into my calculator it comes out –16

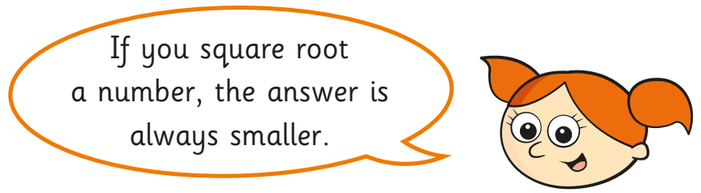


Annie has made a mistake.

a) Explain why –16 is not the square of –4

b) What mistake has Annie made?

7



Use an example to show Alex is incorrect.

8 Brett thinks of a number.

He squares the number and subtracts 26

Brett's answer is 199

a) What was Brett's original number?

☐

b) Is there more than one possible answer?

9 Dora is thinking of two numbers.

She squares the numbers, then adds them together.

The answer is equal to another square number.

What two numbers was Dora thinking of?

☐ and ☐

How many possible answers can you find?

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