

**Workout**

Question 1: Work out each of the following

- (a)  $\sqrt{9}$  <sup>3</sup> (b)  $\sqrt{25}$  <sup>5</sup> (c)  $\sqrt{100}$  <sup>10</sup> (d)  $\sqrt{4}$  <sup>2</sup> (e)  $\sqrt{36}$  <sup>6</sup> (f)  $\sqrt{64}$  <sup>8</sup>  
 (g)  $\sqrt{16}$  <sup>4</sup> (h)  $\sqrt{81}$  <sup>9</sup> (i)  $\sqrt{144}$  <sup>12</sup> (j)  $\sqrt{121}$  <sup>11</sup> (k)  $\sqrt{1}$  <sup>1</sup> (l)  $\sqrt{0}$  <sup>0</sup>

Question 2: Below is a list of numbers.

0    1    4    7    8    9    11    15    20    25    29

From the list write down:

- (a) The square root of 81 <sup>9</sup>  
 (b) The square root of 225 <sup>15</sup>  
 (c) The square root of 400 <sup>20</sup>  
 (d) The square root of 1 <sup>1</sup>

Question 3: Work out each of the following

You may use a calculator

- (a)  $\sqrt{324}$  <sup>18</sup> (b)  $\sqrt{1444}$  <sup>38</sup> (c)  $\sqrt{841}$  <sup>29</sup> (d)  $\sqrt{4225}$  <sup>65</sup> (e)  $\sqrt{21316}$  <sup>146</sup> (f)  $\sqrt{652864}$  <sup>808</sup>  
 (g)  $\sqrt{29.16}$  <sup>5.4</sup> (h)  $\sqrt{53.29}$  <sup>7.3</sup> (i)  $\sqrt{0.16}$  <sup>0.4</sup> (j)  $\sqrt{216.09}$  <sup>14.7</sup> (k)  $\sqrt{123.21}$  <sup>11.1</sup> (l)  $\sqrt{13.1044}$  <sup>3.62</sup>

Question 4: Between which two consecutive integers do each of the following lie between?  
 e.g.  $\sqrt{53}$  lies between 7 and 8

- (a)  $\sqrt{20}$  <sup>4 & 5</sup> (b)  $\sqrt{97}$  <sup>9 & 10</sup> (c)  $\sqrt{6}$  <sup>2 & 3</sup> (d)  $\sqrt{41}$  <sup>6 & 7</sup> (e)  $\sqrt{130}$  <sup>11 & 12</sup> (f)  $\sqrt{250}$  <sup>15 & 16</sup>

Question 5: Estimate each of the following.

Give each estimate to 1 decimal place.

- (a)  $\sqrt{56}$  <sup>7.4-7.6</sup> (b)  $\sqrt{10}$  <sup>3.1-3.3</sup> (c)  $\sqrt{95}$  <sup>9.6-9.8</sup> (d)  $\sqrt{63}$  <sup>7.8-8.0</sup> (e)  $\sqrt{150}$  <sup>12.1-12.3</sup> (f)  $\sqrt{86}$  <sup>9.2-9.4</sup>  
<sup>7.5</sup>    <sup>3.2</sup>    <sup>9.7</sup>    <sup>7.9</sup>    <sup>12.2</sup>    <sup>9.3</sup>

Question 6: Using your calculator, work out the answers to Question 5.

# Square Root

Video 228 on [www.corbettmaths.com](http://www.corbettmaths.com)

## Apply

Question 1: Harriet thinks of a number.  
She squares it and then adds 11.  
Harriet's answer is 36.  
What was her original number? 5

Question 2: A square has an area of  $225\text{cm}^2$ .  
Work out the perimeter of the square. 60cm

Question 3: Place each of the digits in the correct position to make the correct calculation.

1

2

4

8

9

√

8

4

1

=

2

9

Question 4: Can you spot any mistakes?

Write down the value of

(a)  $\sqrt{16}$

*They have halved instead of square rooted.*

$$\begin{array}{r} 8 \quad 4 \\ \hline (1) \end{array}$$

(b)  $\sqrt{100}$

$$\begin{array}{r} 50 \quad 10 \\ \hline (1) \end{array}$$

Question 5:  $x$  is a positive integer.  
Find the value of  $x$ .

13

5

√

$3^2 + 4^2 + 12^2$

=

$\sqrt{3^2 + 4^2}$

+

$\sqrt{x^2}$

$x = 8$

Question 6: In 1980 a man's age was the square root of the number of the year of his birth.



- (a) When was he born? 1936  
 (b) Did he have to join the forces in the First World War or the Second World War?

*No, he would have been 3 years old at the start of WW1 and 9 years old at the end of WW1.*