Question 1: Write down 3 rational numbers

Question 2: Write down 3 irrational numbers

Question 3: List any irrational numbers from the box below

\[
\begin{array}{cccc}
8 & \pi & \frac{2}{3} & \sqrt{4} \\
\frac{1}{2} & \sqrt{5} & 0.1 \\
\end{array}
\]

Question 4: Write down an irrational number between 4 and 6.

Question 5: Write down an irrational number between 3 and 4.

Question 6: Write down an irrational number between 6 and 7.

Question 7: \(\sqrt{y}\) is a rational number between \(\sqrt{33}\) and \(\sqrt{50}\)
Find a value for \(y\).

Question 8: \(\sqrt{z}\) is a rational number between \(\sqrt{125}\) and \(\sqrt{150}\)
Find a value for \(z\).

Question 9: \(\sqrt[3]{a}\) is a rational number between \(\sqrt[3]{100}\) and \(\sqrt[3]{200}\)
Find a value of \(a\).

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Rational and Irrational Numbers

Video 230 on Corbettmaths

Question 1: Hannah says “all integers are rational.” Is Hannah correct?

Question 2: Kate says “0.3333... is irrational because it is a recurring decimal.” Is Kate correct?

Question 3: Does this equation have rational or irrational solutions?
\[ \frac{2}{3}x^2 = 40 \]

Question 4: The equation below can have rational or irrational solutions.
\[ 5x^2 = k \]
(a) Write down a value for k which gives rational solutions.
(b) Write down a value for k which gives irrational solutions.

Question 5: ABC is a right angled triangle. Is the length BC rational or irrational?

Question 6: Show \((7 - \sqrt{2})(7 + \sqrt{2})\) is rational

Question 7: Find two surds that when multiplied together give a rational answer.

Question 8: Show \(\frac{2\sqrt{27}}{5\sqrt{3}}\) is rational