SMART EXAM RESOURCES
STAGE 9 MATHEMATICS
TOPIC QUESTIONS
TOPIC: RATIONAL AND IRRATIONAL NUMBERS
SET-1

1 Use the numbers in the box to complete the sentences.

$\sqrt{19}$	$\frac{19}{6}$
8^2	π

..... and ..... are rational numbers.

..... and ..... are irrational numbers.

[1]

Mark Scheme:

	8^2 and $\frac{19}{6}$ (are rational numbers) $\sqrt{19}$ and π (are irrational numbers)	**1**		Both sentences correct for the mark. The two rational values and the two irrational values can be written in either order.

2 Write down an irrational number with a value between 10 and 20.

..... [1]

MARK SCHEME

An irrational number between 10 and 20	**1**	

Example:

1. $\pi + 10$ (which is approximately 13.14159...)
2. $\sqrt{2} + 10$ (which is approximately 11.41421...)
3. $\sqrt{3} + 10$ (which is approximately 11.73205...)

3

$33\frac{1}{3}\%$ π $\frac{1}{13}$ $343^{\frac{1}{3}}$ $\sqrt{3}$ 5.6×10^{-7}

Two of the numbers in this list are irrational.

Put a ring around each of these irrational numbers. [1]

MARK SCHEME

	$\pi \quad \sqrt{3}$ cao	**1**	

4 Write down the two rational numbers from this list.

$\frac{2}{3}$ $\sqrt{3}$ 2 π

..... [1]

MARK SCHEME

	$\frac{2}{3}$ and 2 only	**1**	

5 $\frac{7}{5}$ 0.6 $\sqrt{7}$ 8 $\sqrt{9}$

From this list, write down an irrational number.

..... [1]

MARK SCHEME

	$\sqrt{7}$	1	

6 Explain why $\sqrt{3}$ is irrational.

..... [1]

MARK SCHEME

	Cannot be written as a fraction oe	1	Accept 3 is a prime number Accept decimal going on forever with no pattern oe