1) Which of the following are irrational numbers? **1 point**

- [ ] $(\sqrt{8}-\sqrt{2})(\sqrt{18}+\sqrt{2})$
- [x] $3^{1/3}$
- [x] $\frac{\sqrt{6}}{\sqrt{8}}$
- [ ] $\frac{\sqrt{8}+\sqrt{2}}{\sqrt{8}-\sqrt{2}}$

Yes, the answer is correct.
Score: 1

Accepted Answers:

$3^{1/3}$
$\frac{\sqrt{6}}{\sqrt{8}}$

2) Suppose $f : D \longrightarrow \mathbb{R}$ is a function defined by $f(x) = \frac{\sqrt{x^2-9}}{x+3}$, where $D \subset \mathbb{R}$. Let A be the set of integers which are not in the domain of f, then find the cardinality of the set A.

6

Yes, the answer is correct.
Score: 1

Accepted Answers:

(Type: Numeric) 6

1 point

3) Consider the set $S = \{a \mid a \in \mathbb{N},\ a \leq 21\}$. Let R_1 and R_2 be relations from S to S defined as $R_1 = \{(x, y) \mid x, y \in S,\ y = 3x\}$ and $R_2 = \{(x, y) \mid x, y \in S,\ y = x^2\}$. Find the cardinality of the set $R_1 \setminus (R_1 \cap R_2)$.

6

Yes, the answer is correct.
Score: 1

Accepted Answers:

(Type: Numeric) 6.0

1 point

4) In a Zoo, there are 6 Bengal white tigers and 9 Bengal royal tigers. Out of these tigers, 5 are males and 10 are either Bengal royal tigers or males. Find the number of female Bengal white tigers in the Zoo.

5

Yes, the answer is correct.
Score: 1

Accepted Answers:

(Type: Numeric) 5

1 point