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75. Irrational Numbers

Practice Questions:

1. Which of these numbers is irrational?

a) $\sqrt{25}$ b) π c) 0.5 d) $\frac{7}{2}$

2. Which of these numbers is irrational?

a) $\sqrt{65}$ b) 0.2121.. c) - 4 d) $\frac{9}{3}$

3. Which of these numbers is irrational?

a) 12 b) 3π. c) $\frac{\sqrt{16}}{3}$ d) 9.5

4. Which of these numbers is irrational?

a) - 10 b) 19 c) $\frac{1}{3}$ d) $4\sqrt{2}$

5. Which of these numbers is irrational?

a) $\frac{\pi}{3}$ b) $\sqrt{4}$ c) $\sqrt{0.16}$ d) $4\sqrt{2}$

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Practice Questions:

6. The perimeter of a square is given by: perimeter = 4 x side length. Find the perimeter of a square with side length $\sqrt{10}$ cm. Give your answer as an exact number.

7. The circumference of a circle is given by: circumference = 2 x π x radius. Find the circumference of a circle with radius 7 cm. Give your answer as an exact number.

8. The area of a circle is given by: area = π x radius^2. Find the exact area of a circle with radius 5 cm.

9. The side length of a square is given by: side length = $\sqrt{\text{area}}$. The area of a square is 10 cm^2. Find the side length as an exact number.

10. The diagonal of a square is given by: diagonal = side length x $\sqrt{2}$. If the diagonal of a square is 10 cm. Find the side length as an exact number.

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Scenario Questions:

1. A square floor tile has sides of 10 cm. The diagonal is $\sqrt{200}$ cm. Can the builder measure this diagonal exactly with a ruler, or is it an irrational length?

2. Three running tracks are measured: Track A = 200 m, Track B = 8π m, Track C = 150 m. Which track length is irrational?

3. A gardener designs a square lawn with an area of 40 m². The side length is $\sqrt{40}$ m. Is this a rational or irrational measurement?

4. A scientist records these results from an experiment: 2.5, $\sqrt{3}$, and 6. Which value is irrational?

5. A carpenter need to cut wood to these lengths: 0.25 m, $\sqrt{121}$ m, $\sqrt{2}$ m, and 10 m. Which of these lengths can he do exactly?

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Scenario Questions:

6. A square coaster has side length $\sqrt{60}$ cm. The perimeter of a square is given by: perimeter = 4 x side length. Find the perimeter of the window. Give your answer as an exact number.

7. A circular pond has radius 7 m. The circumference of a circle is given by:
circumference = $2 \times \pi \times$ radius. Find the exact circumference of the pond.

8. A circular pizza has radius 5 cm. The area of a circle is given by: area = $\pi \times \text{radius}^2$. Find the exact area of the pizza.

9. A square patio has an area of 20 m^2. The area of a square is given by: area = side^2.
Find the exact length of one side.

10. A square TV screen has a diagonal of 10 inches. The diagonal of a square is given by:
diagonal = side x $\sqrt{2}$

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ANSWERS

Topic 75. Irrational Numbers

Practice Questions:

1. π
2. $\sqrt{65}$
3. 3π
4. $4\sqrt{2}$
5. $\pi/3$
6. $4\sqrt{10}$ cm
7. 14π cm
8. 25π cm^2
9. $\sqrt{10}$ cm
10. $5\sqrt{2}$ cm

Scenario Questions:

1. Irrational length
2. 8π m
3. Irrational
4. $\sqrt{3}$
5. 0.25 m, 10 m
6. $8\sqrt{15}$ cm
7. 14π m
8. 25π cm^2
9. $2\sqrt{5}$ m
10. $5\sqrt{2}$ in

Verify Answers

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