Multiple choice questions - Surds and exact values

Year: Year 10 · 10

Question 1 (Higher) $\sqrt{20} =$

- ◯ **A.** $4\sqrt{5}$
- ◯ **B.** $2\sqrt{5}$
- ◯ **C.** $5\sqrt{2}$
- ◯ **D.** $10\sqrt{2}$

Question 2 (Higher) $\sqrt{2} \times \sqrt{8} =$

- ◯ **A.** 4
- ◯ **B.** $\sqrt{10}$
- ◯ **C.** $2\sqrt{4}$
- ◯ **D.** 16

Question 3 (Higher) $3\sqrt{2} + \sqrt{2} =$

- ◯ **A.** $3\sqrt{2}$
- ◯ **B.** $4\sqrt{2}$
- ◯ **C.** $3\sqrt{4}$
- ◯ **D.** $4\sqrt{4}$

Question 4 (Higher) $(1 + \sqrt{2})(1 - \sqrt{2}) =$

- ◯ **A.** 3
- ◯ **B.** 1
- ◯ **C.** -1
- ◯ **D.** $1 - 2\sqrt{2}$

Question 5 (Higher) $\dfrac{6}{\sqrt{2}} =$

- ◯ **A.** $3\sqrt{2}$
- ◯ **B.** $6\sqrt{2}$
- ◯ **C.** $\sqrt{3}$

- **D.** $\frac{3}{\sqrt{2}}$

Question 6 Which of these is a rational number?

- **A.** $\sqrt{2}$
- **B.** $\sqrt{3}$
- **C.** $\sqrt{16}$
- **D.** π

Question 7 The area of a circle of radius 5 cm, in terms of π, is

- **A.** 10π
- **B.** 25π
- **C.** 5π
- **D.** $25\pi^2$

Question 8 (Higher) $\sqrt{27} =$

- **A.** $9\sqrt{3}$
- **B.** $3\sqrt{3}$
- **C.** $3\sqrt{9}$
- **D.** $\sqrt{3}$

Question 9 (Higher) $(2\sqrt{3})^2 =$

- **A.** 6
- **B.** 12
- **C.** $4\sqrt{3}$
- **D.** 9

Question 10 (Higher) $(\sqrt{3}+1)^2 =$

- **A.** 4
- **B.** $4+2\sqrt{3}$
- **C.** $3+2\sqrt{3}$
- **D.** $4+\sqrt{3}$

Answer grid - Surds and exact values

Year: Year 10

Question	Answer	Explanation
1	**B**	$\sqrt{4 \times 5} = 2\sqrt{5}$.
2	**A**	$\sqrt{16} = 4$.
3	**B**	Like surds: $3 + 1 = 4$.
4	**C**	$1 - 2 = -1$.
5	**A**	$\frac{6\sqrt{2}}{2} = 3\sqrt{2}$.
6	**C**	$\sqrt{16} = 4$.
7	**B**	$\pi r^2 = 25\pi$.
8	**B**	$\sqrt{9 \times 3}$.
9	**B**	$4 \times 3 = 12$.
10	**B**	$3 + 2\sqrt{3} + 1$.