

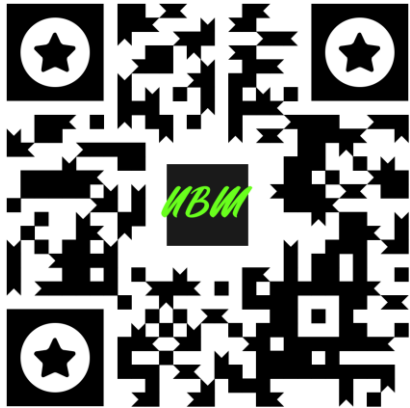
MATHEMATICS

Topic: ALGEBRA, EQUATIONS, AND INEQUALITIES GRADE 10

CAPS ALIGNED

NUMBER SYSTEM AND MISCELLANEOUS

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NUMBER SYSTEM AND MISCELLANEOUS - GRADE 10

Exercises - A

DBE/NOVEMBER 2015

1.3 Consider the following numbers: $\sqrt{27}$; $\sqrt[3]{-27}$; $\sqrt{-27}$.

Which ONE of these numbers is:

1.3.1 Irrational

1.3.2 Non-real

1.3.1 $\sqrt{27}$

1.3.2 $\sqrt{-27}$

NUMBER SYSTEM AND MISCELLANEOUS - GRADE 10

Exercises - B

DBE/NOVEMBER 2017

QUESTION 1

1.1 Given: $q = \sqrt{b^2 - 4ac}$

1.1.1 Determine the value of q if $a = 2$, $b = -1$ and $c = -4$.
Leave your answer in simplest surd form.

1.1.2 State whether q is rational or irrational.

1.1.3 Between which TWO consecutive integers does q lie?

$$1.1 \quad q = \sqrt{b^2 - 4ac}$$

$$1.1.1 \quad q = \sqrt{(-1)^2 - 4 \times (2) \times (-4)}$$
$$= \sqrt{1 + 32}$$

$$q = \sqrt{33}$$

1.1.2 irrational

$$1.1.3 \quad \sqrt{25} < \sqrt{33} < \sqrt{36}$$

$$5 < \sqrt{33} < 6$$

$\therefore q$ lies between 5 and 6

NUMBER SYSTEM AND MISCELLANEOUS - GRADE 10

Exercises - C

DBE/NOVEMBER 2018

1.3 Determine the value of $(3p+q)^2$ if $9p^2+q^2=12$ and $pq=-3$.

$$\begin{aligned} 1. \quad 3(3p+q)^2 &= (3p+q)(3p+q) \\ &= 9p^2 + 3pq + 3pq + q^2 \\ &= 9p^2 + 6pq + q^2 \\ &= 9p^2 + q^2 + 6pq \\ &= 12 + 6 \times (-3) \\ &= 12 - 18 \\ &= -6 \end{aligned}$$

END

$$e^{i\pi} + 1 = 0$$

Euler's Identity

SOURCES

- 1. FET CAPS DOCUMENT**
- 2. GRADE 10 EXAMINATION GUIDELINES**
- 3. GRADE 10 DBE/NOVEMBER 2015 -2018**