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

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

$= \sqrt{1 + 32}$

$q = \sqrt{33}$

1.1.2 irrational

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

$5 < \sqrt{33} < 6$

$\therefore q$ 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 $pq=-3$.

1.3 $(3p+q)^2 = (3p+q)(3p+q)$

$= 9p^2+3pq+3pq+q^2$

$= 9p^2+6pq+q^2$

$= 9p^2+q^2+6pq$

$= 12+6\times(-3)$

$= 12-18$

$= -6$

END

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

Euler's Identity

SOURCES

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