



GRADE 12 INFORMAL TEST 1

PAST PAPER
QUESTION

DO THESE
QUESTIONS IN
YOUR BOOKS.

THESE QUESTIONS
SHOULD TAKE
ABOUT 25 MINUTES
TO DO

QUESTION 1

1.1 Solve for x :

1.1.1 $x^2 - x - 20 = 0$ (2)

1.1.2 $2x^2 - 11x + 7 = 0$ (correct to TWO decimal places) (3)

1.1.3 $5x^2 + 4 > 21x$ (5)

1.1.4 $2^{2x} - 6 \cdot 2^x = 16$ (4)

1.2

Solve for x and y simultaneously:

$$y + 1 = 2x$$

$$x^2 - xy + y^2 = 7$$

(6)

1.3 The roots of a quadratic equation are given by $x = \frac{-5 \pm \sqrt{20+8k}}{6}$,
where $k \in \{-3; -2; -1; 0; 1; 2; 3\}$.

1.3.1 Write down TWO values of k for which the roots will be rational. (2)

1.3.2 Write down ONE value of k for which the roots will be non-real. (1)

1.4 Calculate a and b if $\sqrt{\frac{7^{2014} - 7^{2012}}{12}} = a(7^b)$ and a is not a multiple of 7. (4)