SOUTHERN AFRICAN JUNIOR & SENIOR MATHEMATICS OLYMPIADS

FEMSISA MATHEMATICS OLYMPIADS

GRADE 8 - 11: 2022

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ANSWERS

NO.	GRADE EIGHT	GRADE NINE	GRADE TEN	GRADE ELEVEN
1	C (165)	B (600)	B ($\frac{3}{2}$)	B (-8; 8)
2	B (5 000)	C (3)	A (6x +3h-4)	C (-12x-6h-11)
3	A (96)	A (24)	C (0)	D (3)
4	B (4)	D ($y = \frac{2}{3}x + 4$)	A (y = -4x-14)	B (x<4 or x≥ 8)
5	C (18)	D ($\frac{-1}{6x}$)	B 5x(7x^2-3x+3)	A ($\pm 2; \pm 5$)
6	D (425)	B (125x^3 + y^3)	D (110)	D (4)
7	A (140^0)	A ($\frac{p-11}{6}$)	A (52)	B (2n+3)
8	C (11 000)	C (5)	C (20)	D (30)
9	D (16)	C (26)	B ($\frac{1}{2}$ or $\frac{-8}{3}$)	D (y=x^2+2x-3)
10	B (940)	C (120^0)	A ($\frac{v^2-m}{2e}$)	A (4)
11	C (20^0)	A (40)	B (55^0)	B (936)
12	B ($48\frac{4}{7}$)	B (9)	C $\frac{20}{(3x+2)(3x-2)}$	C (2;3)
13	A (8 000)	D (3)	D (1792)	B ($\frac{cos\,\theta}{1-cos\,\theta}$)
14	D (36)	C (6)	C ($600\frac{29}{30}$)	C (6)
15	B (2.5)	A (18)	C (2;4)	A ($\frac{1}{20}$)
16	45^0	20 000	44	$10\sqrt{14}$
17	15	78%	30	$32\sqrt{3}$
18	6	06:40	20	$\frac{5}{11}$
19	72	1 728	$96\sqrt{3}$	35:8
20	5	48cm	$10\frac{10}{11}$ *minutes* past 2 *o clock*	92

1 – 15 = 15 X 1 MARKS = 15

16 – 20 = 5 X 2 MARKS = 10

TOTAL = 25

CERTIFICATES:

Gold: 17+

Silver: 12-16

Bronze: 8-11

Participation: 0-7