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BASELINE ASSESSMENT

GRADE 11

MEMORANDUM

This test is mainly to identify the learner's problem areas. The final mark is only a rough estimation, as the weight of all the questions are 1 mark irrespective of number of steps.

72

Calculate:

7003/ 7004

1) $-1 + 6 = 5$ FOR MARK

2) $5 - 9 = -4$ FOR MARK

3) $-7 - 2 = -9$ FOR MARK

4) $-5 \times 10 \times -3$ 7005

$= 150$ FOR MARK

5) $28 \div -7 = -4$ FOR MARK

6) $4 \times 3 + 6 \times 5$ 7006

$= 12 + 30$

$= 42$ FOR MARK

7) $8 + 2 \times 9$ 7006

$= 8 + 18$

$= 26$ FOR MARK

8) $-30 \div 10 \times 5 + 7$ 7007

$= -3 \times 5 + 7$

$= -15 + 7$

$= -8$ FOR MARK

9) $3 \times 2 \times (72 \div 9) - 13$ 7007

$= 6 \times (8) - 13$

$= 48 - 13$

$= 35$ FOR MARK

10) $\frac{2}{6}\ of\ 36 - 10$ 7008

$= \frac{2}{6} \times \frac{36}{1} - 10$

$= 12 - 10$

$= 2$ FOR MARK

11) $4 \times 10 \div 5 \times (13 - 11)$ 7009

$= 40 \div 5 \times (2)$

$= 8 \times 2$

$= 16$ FOR MARK

Find the equivalent fractions: 7019

12) $\frac{5}{7} = \frac{15}{21}$ FOR MARK

13) $\frac{2}{9} = \frac{8}{36}$ FOR MARK

Simplify: 7019

14) $\frac{35}{77} = \frac{5}{11}$ FOR MARK

15) $\frac{24}{80} = \frac{3}{10}$ FOR MARK

Fill in <, > or = 7019

16) $\frac{3}{5} < \frac{20}{25}$ FOR MARK

17) $\frac{7}{9} > \frac{3}{5}$ 7019 FOR MARK

Write as mixed fraction: 7020

18) $\frac{11}{2} = 5\frac{1}{2}$ FOR MARK

19) $\frac{38}{5} = 7\frac{3}{5}$ FOR MARK

Write as improper fraction: 7020

20) $8\frac{2}{3} = \frac{26}{3}$ FOR MARK

21) $3\frac{9}{11} = \frac{42}{11}$ FOR MARK

Calculate:

22) $\frac{5}{7}+\frac{4}{7}=\frac{9}{7}$ — 7021 — FOR MARK

23) $\frac{1}{6}+\frac{4}{9}$ — 7021

$=\frac{3+8}{18}$

$=\frac{11}{18}$ — FOR MARK

24) $1\frac{1}{3}+2\frac{3}{4}$ — 7022

$=\frac{4}{3}+\frac{11}{4}$

$=\frac{16+33}{12}$

$=\frac{49}{12}$ — FOR MARK

25) $\frac{2}{3}\times\frac{5}{8}$ — 7023

$=\frac{10}{24}=\frac{5}{12}$ — FOR MARK

26) $\frac{7}{9}\ of\ 45$ — 7023

$=\frac{7}{9}\times\frac{45}{1}$

$=7\times5=35$ — FOR MARK

27) $\frac{3}{8}\div\frac{1}{7}$ — 7023

$=\frac{3}{8}\times\frac{7}{1}$

$=\frac{21}{8}$ — FOR MARK

28) $2\frac{1}{4}\times5\frac{5}{6}\div1\frac{11}{24}$ — 7024

$=\frac{9}{4}\times\frac{35}{6}\div\frac{35}{24}$

$=\frac{9}{4}\times\frac{35}{6}\times\frac{24}{35}$

$=\frac{9}{4}\times\frac{1}{1}\times\frac{4}{1}$

$=9$ — FOR MARK

29) $3x-\frac{x^2}{3}-7x^3+10$

a) How many terms are in the expression? — 8081 — 4 — FOR MARK

b) What is the variable? — 8082 — x — FOR MARK

c) What is the constant term? — 10 — FOR MARK

d) What is the coefficient of x^3? — 8083 — -7 — FOR MARK

e) What is the degree of the expression? — 3 — FOR MARK

f) Rearrange the expression in descending powers of x. — 8083

$-7x^3-\frac{x^2}{3}+3x+10$ — FOR MARK

Simplify:

30) $5x+2x$ — 8084

$=7x$ — FOR MARK

31) $3x^2+4xy+2x+x^2+2xy$ — 8084

$=4x^2+6xy+2x$ — FOR MARK

Simplify:

32) $6\times a\times a\times a\times b\times b$ — 8085

$=6a^3b^2$ — FOR MARK

33) $(6g^2h)(2gh^3)$ — 8085

$=12g^3h^4$ — FOR MARK

34) Subtract $3a^2+9a-6$ from $4a^2+5a-7$. — 8089

$=4a^2+5a-7-(3a^2+9a-6)$

$=4a^2+5a-7-3a^2-9a+6$

$=a^2-4a-1$ — FOR MARK

If $x=-3, y=3, z=4$ determine:

35) $12z-20$ — 8090

$=12(4)-20$

$=28$ — FOR MARK

36) $\frac{5y-3}{3x+5}$ 8090

$= \frac{5(3)-3}{3(-3)+5}$

$= \frac{12}{-4}$

$= -3$ FOR MARK

37) $(3x^2)^3 \times (x^4)^2$ 8093

$= 27x^6 \times x^8$

$= 27x^{14}$ FOR MARK

38) $\sqrt{36x^8y^{14}}$ 8094

$= 6x^4y^7$ FOR MARK

39) $\sqrt[3]{27g^{12}k^6}$ 8094

$= 3g^4k^2$ FOR MARK

Simplify:

40) $-6x^3(x^4-2)$ 1001

$= -6x^7 + 12x^3$ FOR MARK

41) $(2a-4b)+7(a-b)$ 1001

$= 2a - 4b + 7a - 7b$

$= 9a - 11b$ FOR MARK

42) $(-2x-2y)(5x+y)$ 1002

$= -10x^2 - 2xy - 10xy - 2y^2$

$= -10x^2 - 12xy - 2y^2$ FOR MARK

Factorise:

43) $4d^3g^8 - 12d^5g^4$ 1004

$= 4d^3g^4(g^4 - 3d^2)$ FOR MARK

44) $x^2 - 64$ 1005

$= (x-8)(x+8)$ FOR MARK

45) $y^3 + 125$ 1006

$= (y+5)(y^2-5y+25)$ FOR MARK

46) $x^2 + 10x + 21$ 1007

$= (x+3)(x+7)$ FOR MARK

47) $x^2 + 2x - 24$ 1007

$= (x+6)(x-4)$ FOR MARK

48) $6x^2 + 7x - 3$ 1008

$= (2x+3)(3x-1)$ FOR MARK

49) $5(t+p) - k(t+p)$ 1009

$= (t+p)(5-k)$ FOR MARK

50) $6x^2 + 2x - 3xy - y$ 1010

$= 2x(3x+1) - y(3x+1)$

$= (3x+1)(2x-y)$ FOR MARK

51) $xy + x^2 + 3x + 3y$ 1011

$= x^2 + 3x + xy + 3y$

$= x(x+3) + y(x+3)$

$= (x+3)(x+y)$ FOR MARK

Simplify:

52) $\frac{9p^3}{q^3} \times \frac{q^3}{3p^2}$ 1017

$= \frac{9p^3}{3p^2}$

$= 3p$ FOR MARK

53) $\frac{x^2+10x+21}{3(x^2-9)} \div \frac{2x^2+14x}{30x^2-90x}$ 1017

$= \frac{(x+7)(x+3)}{3(x+3)(x-3)} \times \frac{30x^2-90x}{2x^2+14x}$

$= \frac{(x+7)}{3(x-3)} \times \frac{30x(x-3)}{2x(x+7)}$

$= \frac{15}{3}$

$= 5$ FOR MARK

54) $\frac{2}{x+5}+\frac{3}{x-3}$ 1018

$=\frac{2(x-3)}{(x+5)(x-3)}+\frac{3(x+5)}{(x+5)(x-3)}$

$=\frac{2(x-3)+3(x+5)}{(x+5)(x-3)}$

$=\frac{2x-6+3x+15}{(x+5)(x-3)}$

$=\frac{5x+9}{(x+5)(x-3)}$ FOR MARK

Simplify:

55) $\frac{x^2y^3\times(x^3y^3)^2}{x^6y^3}$ 1023

$=\frac{x^2y^3\times x^6y^6}{x^6y^3}$

$=\frac{x^8y^9}{x^6y^3}$

$=x^2y^6$ FOR MARK

56) $\frac{x^2\times x^{-4}}{x^{-7}\times x^3}$ 1023

$=\frac{x^{-2}}{x^{-4}}$

$=x^{-2-(-4)}$

$=x^2$ FOR MARK

57) $x^{-2}\times\sqrt[3]{x^6}$ 1023

$=x^{-2}\times x^2$

$=x^0$

$=1$ FOR MARK

58) $\frac{5^{x+1}+5^{x+2}}{5^{x+1}+5^x}$ 1024

$=\frac{5^x.5^1+5^x.5^2}{5^x.5^1+5^x}$

$=\frac{5^x(5^1+5^2)}{5^x(5^1+1)}$

$=\frac{5^1+5^2}{5^1+1}$

$=\frac{30}{6}=5$ FOR MARK

59) $\frac{25^{2n-4}}{5^{3n+1}.5^{2n-3}.5}$ 1025

$=\frac{(5^2)^{2n-4}}{5^{3n+1}.5^{2n-3}.5^1}$

$=\frac{5^{4n-8}}{5^{3n+1}.5^{2n-3}.5^1}$

$=5^{4n-8-(3n+1)-(2n-3)-1}$

$=5^{-n-7}=\frac{1}{5^{n+7}}$ FOR MARK

Solve the following equations:

60) $1-2x=3+2(x+2)$ 1027

$1-2x=3+2x+4$

$-2x-2x=3+4-1$

$-4x=6$

$x=\frac{6}{-4}$ (mark correct)

$x=-\frac{3}{2}=-1{,}5$ FOR MARK

61) $\frac{5}{4}+\frac{2}{3x}=4-\frac{x+8}{12x}$ 1028

$15x+8=48x-(x+8)$

$15x+8=48x-x-8$

$15x-48x+x=-8-8$

$-32x=-16$

$x=\frac{1}{2}=0{,}5$ FOR MARK

62) $3^{4y-6}=3^{-2}$ 1029

$4y-6=-2$

$4y=-2+6$

$4y=4$

$y=1$ FOR MARK

63) $3.5^x=375$ 1029

$5^x=125$

$5^x=5^3$

$x=3$ FOR MARK

64) $x^2 - 10x + 24 = 0$ 1030

$(x-4)(x-6) = 0$

$x - 4 = 0 \ \ or \ \ x - 6 = 0$

$x = 4 \ \ or \ \ x = 6$

FOR MARK

Solve the simultaneous equations:

65) $2x + y = 7$
$3x + 2y = 12$ 1031

$y = 7 - 2x$

$3x + 2(7 - 2x) = 12$

$3x + 14 - 4x = 12$

$3x - 4x = 12 - 14$

$-x = -2$

$x = 2$

$y = 7 - 2(2) = 3$

FOR MARK

66) Make x the subject of the formula:

$y = mx^2 + c$ 1033

$mx^2 + c = y$

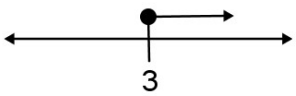
$mx^2 = y - c$

$x^2 = \frac{y-c}{m}$

$x = \sqrt{\frac{y-c}{m}}$

FOR MARK

Write the interval or set-builder notation for the number lines:

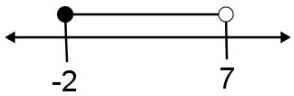
67) 

1036

$x \geq 3 ; x \in \mathbb{R}$

FOR MARK

OR $x \in [3 ; \infty)$

68) 

1036

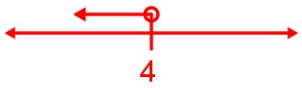
$-2 \leq x < 7 ; x \in \mathbb{R}$

FOR MARK

OR $x \in [-2 ; 7)$

Draw the number line for the following:

69) $x < 4 ; x \in \mathbb{R}$ 1037



FOR MARK

70) $x \in (5 ; 9]$ 1037

FOR MARK

Solve the following inequalities:

71) $5x + 1 \leq 6x - 2$ 1038

$5x - 6x \leq -2 - 1$

$-x \leq -3$

$x \geq 3$

FOR MARK

72) $-1 < 2x - 3 \leq 5$ 1038

$-1 + 3 < 2x \leq 5 + 3$

$2 < 2x \leq 8$

$1 < x \leq 4$

FOR MARK