BASELINE ASSESSMENT
GRADE 10
MEMORANDUM

70

Calculate:

7003/7004

1) $-1 + 6 = 5$ — FOR MARK

2) $5 - 9 = -4$ — FOR MARK

3) $-7 - 2 = -9$ — FOR MARK

Calculate:

4) $-5 \times 10 \times -3$
$= 150$ — **7005** FOR MARK

5) $28 \div -7 = -4$ — FOR MARK

6) $4 \times 3 + 6 \times 5$
$= 12 + 30$
$= 42$ — **7006** FOR MARK

7) $8 + 2 \times 9$
$= 8 + 18$
$= 26$ — **7006** FOR MARK

8) $-30 \div 10 \times 5 + 7$
$= -3 \times 5 + 7$
$= -15 + 7$
$= -8$ — **7007** FOR MARK

9) $3 \times 2 \times (72 \div 9) - 13$
$= 6 \times (8) - 13$
$= 48 - 13$
$= 35$ — **7007** 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

7019

17) $\frac{7}{9} > \frac{3}{5}$ — 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:

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

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

Calculate:

22) $\frac{5}{7} + \frac{4}{7} = \frac{9}{7}$

23) $\frac{1}{6} + \frac{4}{9}$

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

$= \frac{11}{18}$

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

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

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

$= \frac{49}{12}$

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

$= \frac{10}{24} = \frac{5}{12}$

26) $\frac{7}{9}$ of 45

$= \frac{7}{9} \times \frac{45}{1} = 7 \times 5 = 35$

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

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

$= \frac{21}{8}$

28) $2\frac{1}{4} \times 5\frac{5}{6} \div 1\frac{11}{24}$

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

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

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

$= 9$

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

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

b) What is the variable? — x

c) What is the constant term? — 10

d) What is the coefficient of m^3? — -7

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

f) Rearrange the expression in descending powers of m.

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

Simplify:

30) $5x + 2x$

$= 7x$

31) $3x^2 + 4xy + 2x + x^2 + 2xy$

$= 4x^2 + 6xy + 2x$

Simplify:

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

$= 6a^3b^2$

33) $(6g^2h)(2gh^3)$

$= 12g^3h^4$

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

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

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

$$= -3$$ FOR MARK

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

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

$$= 27x^{14}$$ FOR MARK

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

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

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

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

Simplify:

40) $2x^5 (3x^3)^2$ 9001

$$= 2x^5 (9x^6)$$

$$= 18x^{11}$$ FOR MARK

41) $\left(\dfrac{5}{x^{-3}}\right)^2$ 9001

$$= (5x^3)^2$$

$$= 25x^6$$ FOR MARK

42) $(5xy)^2 \times \dfrac{2x^2 y^0}{x^7}$ 9001

$$= \dfrac{25x^2 y^2}{1} \times \dfrac{2}{x^5}$$

$$= \dfrac{50x^2 y^2}{x^5}$$

$$= \dfrac{50y^2}{x^3}$$ FOR MARK

43) $\dfrac{x^4 \times x^9 y^{15}}{(x^3 y^2)^3 \times (xy^2)^4}$ 9002

$$= \dfrac{x^{13} y^{15}}{x^9 y^6 \times x^4 y^8}$$

$$= \dfrac{x^{13} y^{15}}{x^{13} y^{14}}$$

$$= y$$ FOR MARK

Write in expanded form:

44) $5,8 \times 10^8$ 9003 FOR MARK

$$= 580\ 000\ 000$$

Write in Scientific Notation:

45) $94\ 000\ 000$ 9003 FOR MARK

$$= 9,4 \times 10^7$$

46) $0,0000031$ 9003 FOR MARK

$$= 3,1 \times 10^{-6}$$

47) $(3,4 \times 10^{-4}) + (3,4 \times 10^{-5})$ 9003 FOR MARK

$$= 3,4 \times 10^{-4} + 0,34 \times 10^{-4}$$

$$= 3,74 \times 10^{-4}$$

Simplify:

48) $-5x^{-3} y^2 \times -8x^9 y^6$ 9004 FOR MARK

$$= 40x^6 y^8$$

49) $5x(-x^2 + x - 2)$ 9005 FOR MARK

$$= -5x^3 + 5x^2 - 10x$$

50) $4x(x+2) - 2x(-7x-3)$ 9005

$= 4x^2 + 8x + 14x^2 + 6x$

$= 18x^2 + 14x$ [FOR MARK]

51) $(x+5)(3x-2)$ 9006

$= 3x^2 - 2x + 15x - 10$

$= 3x^2 + 13x - 10$ [FOR MARK]

52) $(x+4)^2$ 9007

$= (x+4)(x+4)$

$= x^2 + 8x + 16$ [FOR MARK]

53) $4x - \{3x - 2[2(x+5) - 6]\}$ 9008

$= 4x - \{3x - 2[2x + 10 - 6]\}$

$= 4x - \{3x - 2[2x + 4]\}$

$= 4x - \{3x - 4x - 8\}$

$= 4x - \{-x - 8\}$

$= 4x + x + 8$

$= 5x + 8$ [FOR MARK]

Factorise:

54) $16x^4 y^8 - 24x^3 y^7 + 8x^2 y^3$ 9010

$= 8x^2 y^3 (2x^2 y^5 - 3xy^4 + 1)$ [FOR MARK]

55) $9c^2 - d^2$ 9011

$= (3c - 2d)(3c + d)$ [FOR MARK]

56) $x^2 - 16x + 15$ 9012

$= (x-1)(x-15)$ [FOR MARK]

57) $3xy + 6x - wy - 2w$ 9013

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

$= (y+2)(3x-w)$ [FOR MARK]

Simplify:

58) $\dfrac{28x^8 y^3 - 42x^3 y^6 - 7x^2 y^4}{7x^2 y^3}$ 9016

$= \dfrac{7x^2 y^3 (4x^6 - 6xy^3 - y)}{7x^2 y^3}$

$= 4x^6 - 6xy^3 - y$ [FOR MARK]

59) $\dfrac{x^2}{9} \times \dfrac{18}{x}$ 9016

$= x \times 2$

$= 2x$ [FOR MARK]

60) $\dfrac{2x^2 - 8x}{5x - 20}$ 9017

$= \dfrac{2x(x-4)}{5(x-4)}$

$= \dfrac{2x}{5}$ [FOR MARK]

61) $\dfrac{x^2 - 25}{5x} \div \dfrac{x-5}{10x}$ 9018

$= \dfrac{(x+5)(x-5)}{5x} \times \dfrac{10x}{x-5}$

$= 2(x+5)$ [FOR MARK]

Solve the following equations:

62) $1 - x = 3 - (-2x - 4)$ 9020

$1 - x = 2x + 7$

$-3x = 6$

$x = -2$ [FOR MARK]

63) $\dfrac{x+2}{4} - \dfrac{x-6}{3} = 1$ 9020

$3(x+2) - 4(x-6) = 12$

$3x + 6 - 4x + 24 = 12$

$-x + 30 = 12$

$x = 18$ FOR MARK

64) $2x(x-8) = 0$ 9021

$2x = 0 \ \ or \ \ x - 8 = 0$

$x = 0 \ \ or \ \ x = 8$ FOR MARK

65) $(x-7)(3x+15) = 0$ 9021

$x - 7 = 0 \ or \ 3x + 15 = 0$

$x = 7 \ \ or \ \ 3x = -15$

$x = -5$ FOR MARK

66) $x^2 - 2x = 0$ 9022

$x(x-2) = 0$

$x = 0 \ or \ x - 2 = 0$

$x = 2$ FOR MARK

67) $x^2 - 2x - 35 = 0$ 9022

$(x-7)(x+5) = 0$

$x - 7 = 0 \ or \ x + 5 = 0$

$x = 7 \ or \ x = -5$ FOR MARK

68) $3^x = 27$ 9023

$3^x = 3^3$

$x = 3$ FOR MARK

69) $3.6^x = 3$ 9023

$6^x = 1$

$6^x = 6^0$

$x = 0$ FOR MARK

70) $4^{3-2x} = 16^{6x-2}$ 9023

$4^{3-2x} = 4^{2(6x-2)}$

$3 - 2x = 12x - 4$

$12x + 2x = 3 + 4$

$14x = 7$

$x = \dfrac{1}{2}$ FOR MARK