

 KEMENTERIA/ PENDIDIKAN MALAYSIA  POLITEKNIK MALAYSIA JABATAN MATEMATIK, SAINS DAN KOMPUTER		COURSE CODE/ COURSE NAME		PBM1035 INTENSIVE MATHEMATICS	
		COURSEWORK ASSESSMENT		TUTORIAL 3	
		SESSION		DECEMBER 2018	
		DURATION	60 MINS	CLO1	10 MARKS
CLO2					
CLO3					
NAME	Sandra Ipoh No	TOTAL MARKS		10 MARKS	
REGISTRATION NO.	051PP10F2024				
PROGRAMME/ SECTION	IPP1				

Instructions

- Answer ALL questions. Write your answers in the spaces provided.
- Show your working to get marks. You may use a non-programmable scientific calculator.

Question 1

CLO1, C1

[1 mark]

- (a) Fill in missing index number.

$$2^{\square} \times 2^4 \div 2^5 = 2^{10}$$

CLO1, C2

[2 marks]

- (b) Simplify the indices in the lowest form.

$$8 \times (8^2)^4 \div 8^3$$

Question 2

CLO1, C1

[1 mark]

- (a) Rewrite the expression as single exponent.

$$19^2 \times 19^0 \div 19^4$$

CLO1, C2

[3 marks]

- (b) Simplify the following indices in the lowest form.

$$\frac{2^{n+2} \times 4^{3-2n}}{8^{3n}}$$

Question 3

CLO1, C3

[3 marks]

Calculate the following without using calculator.

$$3^{x-2} = 27^{x+4}$$

Question 1

a) $2^x \times 2^4 \div 2^5 = 2^{10}$
 $2^x \times 2^{4-5} = 2^{10}$
 $2^x \times 2^{-1} = 2^{10}$
 $x - 1 = 10$
 $x - 1 + 1 = 10 + 1$
 $x = 11$

b)

$$\begin{aligned} & 8 \times (8^2)^4 \div 8^3 \\ &= 8 \times 8^{2 \times 4} \div 8^3 \\ &= 8 \times 8^8 \div 8^3 \\ &= 8 \times 8^{8-3} \\ &= 8 \times 8^5 \\ &= 8^{1+5} \\ &= 8^6 \end{aligned}$$

Question 2

a) $19^2 \times 19^0 \div 19^4$
 19^{2+0-4}
 $= 19^{-2}$
 $= \frac{1}{19^2}$

b) $\frac{2^{n+2} \times 4^{3-2n}}{8^{3n}}$
 $= \frac{2^{n+2} \times (2^2)^{3-2n}}{2^{3n}}$
 $= \frac{2^{n+2} \times 2^{6-4n}}{2^{3n}}$
 $= 2^{n+2+6-4n-3n}$
 $= 2^{-12n+8}$

$$3^{x-2} = 27^{x+4}$$

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

$$3^{x-2} = 3^{3x+12}$$

$$x - 2 = 3x + 12$$

$$x - 2 = 3x - 3x + 12$$

$$x - 3x - 2 = 12$$

$$-2x - 2 + 2 = 12 + 2$$

$$\begin{array}{r} -2x = 14 \\ \hline -2 \quad \quad -2 \end{array}$$

$$x = -7$$

3)