BAB 2

Pemfaktoran dan Pecahan Algebra
Factorisation and Algebraic Fractions

Bahagian A/*Section A*

2.1 Kembangan/*Expansion*

1 Kembangkan $5x(x + 4)$.
Expand $5x(x + 4)$.

A $5x + 20$ **C** $5x^2 + 20$
B $5x^2 + 4$ **D** $5x^3 + 20x$

2 $(2x - y)^2 =$

A $4x^2 + 4xy - y^2$ **C** $4x^2 - 2xy + y^2$
B $4x^2 - 4xy + y^2$ **D** $2x^2 - 4xy - y^2$

3 Permudahkan $(2m + 1)(m - 5) - m + 8$.
Simplify $(2m + 1)(m - 5) - m + 8$.

A $2m^2 - 10m + 3$
B $2m^2 - 10m - 13$
C $2m^2 - 8m + 3$
D $2m^2 - 8m + 13$

4 Panjang sisi bagi sebuah segi empat sama ialah $(10 - m)$ cm. Cari luas, dalam cm^2, segi empat sama itu.
The length of a square is $(10 - m)$ *cm. Find the area, in* cm^2, *of the square.*

A $m^2 - 10m + 100$
B $m^2 - 10m - 100$
C $m^2 - 20m + 100$
D $m^2 - 20m - 100$

2.2 Pemfaktoran/*Factorisation*

5 Antara berikut, yang manakah faktor sepunya terbesar (FSTB) bagi $4pq^2r$ dan $3p^2q$?
Which of the following is the highest common factor (HCF) of $4pq^2r$ *and* $3p^2q$?

A pq **C** pq^2
B p^2q **D** pqr

6 Faktorkan selengkapnya $12k - 4k^2$.
Factorise completely $12k - 4k^2$.

A $4k(k - 1)$ **C** $4k(3 - k)$
B $4(3 - k)$ **D** $4(3k - k^2)$

7 Faktorkan $x^2 + 12x + 20$.
Factorise $x^2 + 12x + 20$.

A $(x + 4)(x + 5)$ **C** $(x - 2)(x + 10)$
B $(x + 2)(x + 10)$ **D** $(x - 2)(x - 10)$

8 Faktorkan $3pr + ps + 12qr + 4qs$.
Factorise $3pr + ps + 12qr + 4qs$.

A $(p + 4q)(r + s)$
B $(p + 4q)(3r + s)$
C $(3p + q)(r + s)$
D $(3p + q)(4r + s)$

2.3 Ungkapan Algebra dan Hukum Operasi Asas Aritmetik
Algebraic Expressions and Laws of Basic Arithmetic Operations

9 Permudahkan/*Simplify*

$$\frac{5}{m+4} - \frac{m-2}{m^2-16}$$

A $\dfrac{2(2m-9)}{m^2-16}$ **C** $\dfrac{2(2m-11)}{m^2-16}$

B $\dfrac{2m+9}{m^2-16}$ **D** $\dfrac{2m+18}{m^2-16}$

10 Permudahkan $\dfrac{k+2}{m^2} \div \dfrac{3k+6}{m}$ sebagai satu pecahan tunggal.

Simplify $\dfrac{k+2}{m^2} \div \dfrac{3k+6}{m}$ *as a single fraction.*

A $\dfrac{m}{3}$ **C** $3m$

B $\dfrac{1}{3m}$ **D** $\dfrac{3}{m}$

11 Permudahkan/*Simplify*

$$\frac{20x - 4y}{25x^2 - y^2}$$

A $\dfrac{2}{5x-y}$

B $\dfrac{4}{5x+y}$

C $\dfrac{4}{5x-y}$

D $\dfrac{5}{5x+y}$

12 Permudahkan/*Simplify*

$$\frac{3}{m+5} - \frac{m-1}{m^2-25}$$

A $\frac{2m+14}{m^2-25}$

B $\frac{2m-14}{m^2-25}$

C $\frac{2m-16}{m^2-25}$

D $\frac{2m+16}{m^2-25}$

13 Permudahkan $\frac{f+2}{eg-7e} \div \frac{f^2+f-2}{g-7}$ sebagai satu pecahan tunggal.

Simplify $\frac{f+2}{eg-7e} \div \frac{f^2+f-2}{g-7}$ *as a single fraction.*

A $\frac{1}{e(f+2)}$

B $\frac{1}{e(f+1)}$

C $\frac{1}{e(f-1)}$

D $\frac{2}{e(f-1)}$

14 Adibah membeli 3 helai kemeja-T dengan harga RM$(15y + 6)$. Sekiranya Azimah mempunyai RM$(30y + 12)$, berapakah bilangan kemeja-T yang sama boleh dibelinya?

Adibah bought 3 T-shirts for RM$(15y + 6)$. If Azimah has RM$(30y + 12)$, how many of the same T-shirts can she buy?

A 4
B 5
C 6
D 7

15 Azman membeli $(2x + 4)$ set alat tulis dengan harga RM$(6x + 2)$ setiap set. Jumlah harga yang perlu dibayar dikongsi bersama tiga orang kawannya yang lain. Hitung harga yang perlu dibayar oleh setiap orang.

Azman bought $(2x + 4)$ sets of stationery at a price of RM$(6x + 2)$ each. The total price to be paid is shared among his three friends. Calculate the price each person has to pay.

A RM$(3x^2 + 8x + 3)$
B RM$(4x^2 + 9x + 3)$
C RM$(3x^2 + 7x + 2)$
D RM$(4x^2 + 7x + 2)$