**+BAB 5 : INDEKS**

**NAMA : \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**KELAS : \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**5.2 : PENDARABAN NOMBOR DALAM**

**TATATANDA INDEKS**

**CONTOH 1**

|  |
| --- |
| (a)84 x 83 (b) *k*2 x *k*7 (c) 2*p*3 x 3*p*2  84+3 = 87 *k*2+7 = *k*9  (2 x 3) x *p3+2* = 6*p*5 |

|  |  |  |
| --- | --- | --- |
| 1. 2² x 25 | 1. (-5)8 x (-5)3 | 1. 74 x 7 x 72 |
| 1. *p*4  x *p* | 1. 4*m12*  x 6*m3* | 1. -7*n2*  x 2*n5*  x (-*n3*) |
| 1. 4 x 43 x 46 | 1. 24 x 23 x 22 | 1. (-6)3 x (-6)2 x (-6) x (-6)7 |
| 1. ()3 x ()2 x ()8 | 1. (4.2)4 x (4.2)2 | 1. *n* x *n3* x *n*5 |
| 1. 3*p*2 x 5*p*4 | 1. 2*k* x (-6*k*3) x 4*k*2 | 1. 5*m*5 x *m*2 x 3*m*3 |

**LATIHAN 1**

A. Permudahkan setiap yang berikut.

*Simplify the following.*

|  |  |  |
| --- | --- | --- |
| 1. 27 x 2 x 29 | 1. ()2 x ()3 | 1. (-3)9 x (-3)4 |
| 1. (1.2)5 x (1.2) x (1.2)8 | 1. -7*h*5 x 2*h*3 x 3*h*2 x *h*7 | 1. *s*4 x *s* x 9*s*7 |
| 1. 53 x 5 | 1. (-2)4 x (-2) x (-2)2 | 1. ()4 x x ()5 |
| 1. *k*3 x *k* x *k*5 | 1. *p* x 6*p3* x 3*p* | 1. 5*n3* x *n4* x 4*n* |
| 1. 6*r*2 x 9*r*4 | 1. 5*j* x (-7*j*3) x 2*j*2 | 1. 4*w*5 x 2*w*2 x 2*w*4 |
| 1. 8*u* x *u* x ½*u* | 1. 3*b* x 5*b x* 6*b* | 1. 2*t* x *t*2 x 6*t*4 |

**CONTOH 2**

|  |  |
| --- | --- |
| 55  x 78  x 5  = 55+1 x 78  = 56 x 78 | 1. 24 x 32 x 23 |
| (b) 5 x 43 x 42 x 55 | (c) (4.2)4 x (1.2)3 x (4.2)2 |
| (d) )2 x ) x )4 x )5 | (e) *k*6 x *h*2 x *k* x *h*3 x *k*4 |
| (f) 2*m*2 x 5*n*4 x 3*m*4 x *n* | (g) 4*x*3 x 2) x 2*x* x 3*y4* |
| (h) 3*r*2  x (-4*s*3) x 4) x 2*s*2 | 1. *p*4x *q*3 x *p* x 8*q2* |
| (k) (-6*k*6) x (-2*h4*) x *h8* x *k*4 | (l) 9*r*4 x 2*s*2 x *s*2 x (-3*r2*) |

**LATIHAN 2**

B. Permudahkan setiap yang berikut.

*Simplify the following.*

|  |  |
| --- | --- |
| 1. (0.7)3 x (0.9)5 x (0.7)9 x (0.9)3 | 1. xx x |
| (e) x x x | (f)  *a*9 x 2*a* x 3*a* x 4*b*2 x *b* |
| (g) 4*b*2 x *c*6 x 6*b*x *c*2 | (h) 8) x (-5*f*4) x 2*e*2 |
| (i) 24 x 33 x 22 x 35 | (j) 87 x 64 x 83 x 6 |
| (k) *m*5 x *n*9 x *m*3 | (l) 5*p*6 x 3*q9* x *p* x 2*q2* |
| (m) 8*k*2 x 2*h*7  x *k* x (-3*h*2) | (n) 5*m6* x *n* x *n5* x (-3*m*) |

**5.3 : PEMBAHAGIAN NOMBOR DALAM**

**TATATANDA INDEKS**

**CONTOH 3**

|  |  |  |
| --- | --- | --- |
| 1. 88 ÷ 82 = 88-2  (b) *g*18 ÷ *g*6 = *g*18-6   = 86 | | 1. 312 ÷ 34 |
| (b) *m*15 ÷ *m*5 | (c) ÷ | (d) 42*v*8 ÷ 7*v*7 |
| (e) (-6*h12*) ÷ 24*h*9 | (f) (-3*y*5) ÷ (-3*y*4) ÷ | (g) (-63*p*14) ÷ (9*p*14) |
| (h) *k*15 x *k*5 | (i) (- *p* )11 ÷ (- *p* )7 | (j) |
| (k) 36*x*4 ÷ 9*x*2 | (l) 12*y*9 ÷ (-6*y*3) | (m) |
| (n) 20*n*3 ÷ 4*n* | (o) | (p) 28*r*9*s*5 ÷ 7*r*4*s*5 |

**LATIHAN 3**

A. Permudahkan setiap yang berikut.

*Simplify the following.*

|  |  |  |
| --- | --- | --- |
| 1. 78 ÷ 72 | 1. 46 ÷ 45 | 1. (-6)12 ÷ (-6)4 |
| (d) | (e) | (f) 311 ÷ 37 ÷ 3 |
| (g) 68 ÷ 62 | (h) *d*7 ÷ *d*4 | (i) *g*15 ÷ *g*5 |
| (j) *y*8 ÷ *y*4 | (k) (-*m*)12 ÷ (-*m*)*5* | (l) 8*r*9 ÷ 4*r*5 |
| (m) 48*p*7 ÷ 6*p*5 | (n) 24*q*11 ÷ (-4*q*5) | (o) 18*m*6 ÷ 6*m*2 |
| (p) *k*15 ÷ *k*15 | (q) -12*n*14 ÷ -4*n*6 | (r) -42*h*16 ÷ 7*h*4 |

**5.4 : NOMBOR DAN SEBUTAN ALGEBRA DALAM**

**TATATANDA INDEKS YANG DIKUASAKAN**

**CONTOH 4**

|  |  |  |
| --- | --- | --- |
| 1. (b) (c)   22x5 = 210 *x*3x4 = *x*12 (-*d)*4x2 = (-*d*)8 | | (a) |
|  |  | (d) |
| (e) | (f) | (g) (-*m*6)0 |
| (h) | (i) | (j) ( *x*8)3 |
| (k) ( *y*4)6 | (l) ( *z*9)0 | (m) ( *q*5)5 |
| (n) | (o) ) | (p) (*k*5)5 |

**LATIHAN 4**

A. Permudahkan setiap yang berikut.

*Simplify the following.*

|  |  |  |
| --- | --- | --- |
| (a) (54)3 | (b) (135)2 | (c) (73)6 |
| 1. (*m*2)7 | 1. (*p*8)4 | 1. (33)5 |
| (f) (69)4 | (g) (112)7 | (h) |
| (i) | (j) | (k) 4 |
| (l) 8 | (m) 3 | (n) 9 |
| (o) 7 | (p) 3 | (q) 6 |

**CONTOH 5**

|  |  |  |
| --- | --- | --- |
| 1. (25)4 x (53)2 = (b) = (c) (3*hk*4*m*2)4 =   34 x *h*4 x *k*4x4 x *m*2x4  25x4 x 53x2 = 220 x 56 = = 81*h4k16m8* | | |
| (a) | (b) *e*4 x | (c) |
| (d) | (e) x 2*vw*4 | (f) ÷ |
| (g) | (h) | (i) |
| (j) | (k) | (l) |
| (m) | (n) | (o) 2 |

**LATIHAN 5**

B. Permudahkan setiap yang berikut.

*Simplify the following.*

|  |  |  |
| --- | --- | --- |
| (a) 38 x 76 ÷ 75 = | (b) *pq* x *q*5 ÷ *pq*5 = | (c) x |
| (d) | (e) | (f) |
| (g) | (h) ÷ | (i) x 2*pq*2 x |
| (j) | (k) | (l) |
| (m) | (n) | (o) |
| (p) | (q) | (r) |

**5.5 : INDEKS NEGATIF**

**CONTOH 6**

|  |  |  |
| --- | --- | --- |
|  | (a) | (b) |
| (c) | (d) | (e) |
| (f) | (g) | (h) |
| (i) | (j) | (k) |

**LATIHAN 6**

A. Permudahkan setiap yang berikut.

*Simplify the following.*

|  |  |  |
| --- | --- | --- |
| (a) | (b) | (c) |
| (d) | (e) | (f) |
| (g) | (h) | (i) |
| (j) | (k) | (l) |

**5.6 : INDEKS PECAHAN**

**CONTOH 7**

|  |  |  |
| --- | --- | --- |
| =  = = |  |  |
|  | (d) | (e) |
| (f) | (g) | (h) |
| (i) | (j) | (k) |

**LATIHAN 7**

A. Permudahkan dan cari nilai setiap yang berikut.

*Simplify and find the value of each of the following.*

|  |  |  |
| --- | --- | --- |
| (a) | (b) | (c) |
|  | (e) | (f) |
| (g) | (h) | (i) |
| (j) | (k) | (l) |

**5.7 : HUKUM INDEKS**

**CONTOH 8**

|  |  |  |
| --- | --- | --- |
| 1. (b)   = =  = =  = =5*pq*  =  =4 | |  |
| (b) | (c) | (d) |
| (e) | (f) | (g) |
| (h) | (i) | (j) |

**LATIHAN 8**

A. Permudahkan dan cari nilai setiap yang berikut.

*Simplify and find the value of each of the following.*

|  |  |  |
| --- | --- | --- |
| (a) | (b) | (c) |
| (d) | (e) | (f) |
| (g) | (h) | (i) |
| (j) | (k) | (l) |

**CONTOH 8 : SOALAN KBAT**

Selesaikan setiap yang berikut.

*Solve each of the following.*

|  |  |
| --- | --- |
| (a) | (b) |
| (c) | (d) |
| (e) | (f) |

**LATIHAN 8 : SOALAN KBAT**

Selesaikan setiap yang berikut.

*Solve each of the following.*

|  |  |
| --- | --- |
| (a) | (b) |
| (c) | (d) |
| (e) | (f) |