班級： 座號： 姓名：

1. 一條長度為20的繩子可以圍出來的矩形面積可以有多大呢？
2. 請完成下面空格

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 長 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| 寬 | 10 | 9 |  |  |  |  |  |  |  |  | 0 |
| 面積 | 0 | 9 |  |  |  |  |  | 面積 |  |  | 0 |

1. 矩形面積最大可以有多大呢？
2. 有沒有辦法圍出面積是6的矩形呢？
3. 面積是12的矩形的長和寬會有多長呢？猜猜看！
4. 請寫出空格中所有的可能

長

1. 空格中可以填入不同的數字

=

×

6

1. 空格中可以填入不同的數字

0

×

=

1. 請在空格中填入相同的數字

=

×

6

1. 小結論：想求出空格中的數字
2. 方法1：先讓等式的其中一邊變成\_\_\_\_\_\_，再把另一邊變成\_\_\_\_\_\_

就可以掌握空格中的數字。

1. 方法2：先讓等式的其中一邊變成\_\_\_\_\_\_，再把另一邊變成\_\_\_\_\_\_

的算式相乘，就可以掌握空格中的數字。

1. 請在空格中填入最適當的數字或算式。

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1. 3412 = \_\_\_\_\_\_\_\_\_

|  |  |  |
| --- | --- | --- |
|  | 3 | 4 |
| ×) | 1 | 2 |
|  | □ | □ |
| □ | □ |  |
| □ | □ | □ |

 | 1. 483=( )( )

|  |  |  |
| --- | --- | --- |
|  | □ | □ |
| ×) | □ | □ |
|  | □ | □ |
| □ | □ |  |
| 4 | 8 | 3 |

 |
| 1. (x+3)2 = \_\_\_\_\_\_\_\_\_

|  |  |  |
| --- | --- | --- |
|  | x | +3 |
| ×) | x | +3 |
|  | □x | □ |
| x2 | □x |  |
| x2 | □x | □ |

 | 1. x2+8x+16=( )2

|  |  |  |
| --- | --- | --- |
|  | x | □ |
| ×) | x | □ |
|  | □x | □ |
| x2 | □x |  |
| x2 | +8x | +16 |

 |
| 1. (x+7)2 = \_\_\_\_\_\_\_\_\_

|  |  |  |
| --- | --- | --- |
|  | x | +7 |
| ×) | x | +7 |
|  | □x | □ |
| x2 | □x |  |
| x2 | □x | □ |

 | 1. x2+4x+4=( )2

|  |  |  |
| --- | --- | --- |
|  | x | □ |
| ×) | x | □ |
|  | □x | □ |
| x2 | □x |  |
| x2 | +4x | +4 |

 |
| 1. (x-5)2 = \_\_\_\_\_\_\_\_\_

|  |  |  |
| --- | --- | --- |
|  | x | -5 |
| ×) | x | -5 |
|  | □x | □ |
| x2 | □x |  |
| x2 | □x | □ |

 | 1. x2-12x+36=( )2

|  |  |  |
| --- | --- | --- |
|  | x | □ |
| ×) | x | □ |
|  | □x | □ |
| x2 | □x |  |
| x2 | -12x | +36 |

 |
| 1. (x-8)2 = \_\_\_\_\_\_\_\_\_

|  |  |  |
| --- | --- | --- |
|  | x | -8 |
| ×) | x | -8 |
|  | □x | □ |
| x2 | □x |  |
| x2 | □x | □ |

 | 1. x2-2x+1=( )2

|  |  |  |
| --- | --- | --- |
|  | x | □ |
| ×) | x | □ |
|  | □x | □ |
| x2 | □x |  |
| x2 | -2x | +1 |

 |

1. 請在空格中填入最適當的數字或算式。

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1. (x+2)(x+3) = \_\_\_\_\_\_\_\_\_

|  |  |  |
| --- | --- | --- |
|  | x | +2 |
| ×) | x | +3 |
|  | □x | □ |
| x2 | □x |  |
| x2 | □x | □ |

 | 1. x2+7x+12=( )( )

|  |  |  |
| --- | --- | --- |
|  | x | □ |
| ×) | x | □ |
|  | □x | □ |
| x2 | □x |  |
| x2 | +7x | +12 |

 |
| 1. (x+4)(x+2) = \_\_\_\_\_\_\_\_\_

|  |  |  |
| --- | --- | --- |
|  | x | +4 |
| ×) | x | +2 |
|  | □x | □ |
| x2 | □x |  |
| x2 | □x | □ |

 | 1. x2+8x+15=( )( )

|  |  |  |
| --- | --- | --- |
|  | x | □ |
| ×) | x | □ |
|  | □x | □ |
| x2 | □x |  |
| x2 | +8x | +15 |

 |
| 1. (x-4)(x-3) = \_\_\_\_\_\_\_\_\_

|  |  |  |
| --- | --- | --- |
|  | x | -4 |
| ×) | x | -3 |
|  | □x | □ |
| x2 | □x |  |
| x2 | □x | □ |

 | 1. x2-5x+6=( )( )

|  |  |  |
| --- | --- | --- |
|  | x | □ |
| ×) | x | □ |
|  | □x | □ |
| x2 | □x |  |
| x2 | -5x | +6 |

 |
| 1. (x-3)(x+5) = \_\_\_\_\_\_\_\_\_

|  |  |  |
| --- | --- | --- |
|  | x | -3 |
| ×) | x | +5 |
|  | □x | □ |
| x2 | □x |  |
| x2 | □x | □ |

 | 1. x2-2x-8=( )( )

|  |  |  |
| --- | --- | --- |
|  | x | □ |
| ×) | x | □ |
|  | □x | □ |
| x2 | □x |  |
| x2 | -2x | -8 |

 |

1. 請在空格中填入適當的答案，讓算式可以成功的完成因式分解。

|  |  |
| --- | --- |
| 1. x2+6x+9=( )( )
 | 1. x2－8x+16=( )( )
 |
| 1. x2+7x-18=( )( )
 | 1. x2－x－12=( )( )
 |

1. 請在空格中填入適當的答案，讓算式可以成功的完成因式分解。

|  |  |
| --- | --- |
| 1. x2+12x+\_\_\_\_\_\_\_=(\_\_\_\_\_\_\_)2
 | 1. x2-8x+\_\_\_\_\_\_\_=(\_\_\_\_\_\_\_)2
 |
| 1. x2-5x+\_\_\_\_=(\_\_\_\_\_)(\_\_\_\_\_)
 | 1. x2+\_\_\_\_x-12=(\_\_\_\_\_)(\_\_\_\_\_)
 |

1. 請在空格中填入最適當的數字或算式。

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1. (2x+3)(4x+5) = \_\_\_\_\_\_\_\_\_\_\_\_

|  |  |  |
| --- | --- | --- |
|  | 2x | +3 |
| ×) | 4x | +5 |
|  | □x | □ |
| □x2 | □x |  |
| □x2 | □x | □ |

 | 1. 5x2+17x+6 = ( )( )

|  |  |  |
| --- | --- | --- |
|  | □x | □ |
| ×) | □x | □ |
|  | □x | □ |
| □x2 | □x |  |
| 5x2 | +17x | +6 |

 |
| 1. (3x+5)(2x+7) = \_\_\_\_\_\_\_\_\_\_\_\_

|  |  |  |
| --- | --- | --- |
|  | 3x | +5 |
| ×) | 2x | +7 |
|  | □x | □ |
| □x2 | □x |  |
| □x2 | □x | □ |

 | 1. 8x2+10x+3 = ( )( )

|  |  |  |
| --- | --- | --- |
|  | □x | □ |
| ×) | □x | □ |
|  | □x | □ |
| □x2 | □x |  |
| 8x2 | +10x | +3 |

 |
| 1. (5x+3)(4x-2) = \_\_\_\_\_\_\_\_\_\_\_\_

|  |  |  |
| --- | --- | --- |
|  | 5x | +3 |
| ×) | 4x | -2 |
|  | □x | □ |
| □x2 | □x |  |
| □x2 | □x | □ |

 | 1. 6x2-13x-5= ( )( )

|  |  |  |
| --- | --- | --- |
|  | □x | □ |
| ×) | □x | □ |
|  | □x | □ |
| □x2 | □x |  |
| 6x2 | -13x | -5 |

 |
| 1. (x+3)(x-3) = \_\_\_\_\_\_\_\_\_\_\_\_

|  |  |  |
| --- | --- | --- |
|  | x | +3 |
| ×) | x | -3 |
|  | □x | □ |
| □x2 | □x |  |
| □x2 | □x | □ |

 | 1. x2-16 = \_\_\_\_\_\_\_\_\_\_\_\_

|  |  |  |
| --- | --- | --- |
|  | □x | □ |
| ×) | □x | □ |
|  | □x | □ |
| □x2 | □x |  |
| x2 |  | -16 |

 |
| 1. (3x+2)(3x-2) = \_\_\_\_\_\_\_\_\_\_\_\_

|  |  |  |
| --- | --- | --- |
|  | 3x | +2 |
| ×) | 3x | -2 |
|  | □x | □ |
| □x2 | □x |  |
| □x2 | □x | □ |

 | 1. 4x2-49= ( )( )

|  |  |  |
| --- | --- | --- |
|  | □x | +□ |
| ×) | □x | +□ |
|  | □x | □ |
| □x2 | □x |  |
| 4x2 |  | -49 |

 |

1. 請在空格中填入適當的答案，讓算式可以成功的完成因式分解。

|  |  |
| --- | --- |
| 1. 6x2+29x+28=(\_\_\_\_\_)(\_\_\_\_\_)
 | 1. 15x2-x-6=(\_\_\_\_\_)(\_\_\_\_\_)
 |
| 1. x2-16=(\_\_\_\_\_)(\_\_\_\_\_)
 | 1. 25x2 -4=(\_\_\_\_\_)(\_\_\_\_\_)
 |

1. 試問下列因式分解何者不正確？ ( 12分 )
(A) *x*2－81＝( *x*＋9 ) ( *x*－9 )　　 (B) 36*x*2－*d* 2＝( 6*x*＋*d* ) ( 6*x*－*d* )
(C) 2*x*2－50＝( *x*＋5 ) ( *x*－5 )　　(D) *x*2＋20*x*＋100＝( *x*＋10 )2
2. 因式分解下列各式：

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1. (x+2)2-(2x+1)2=(\_\_\_\_\_\_\_)(\_\_\_\_\_\_\_)

|  |  |  |
| --- | --- | --- |
|  | □(x+2) | □(2x+1) |
| ×) | □(x+2) | □(2x+1) |
|  | □(x+2)(2x+1) | □(2x+1)2 |
| □(x+2)2 | □(x+2)(2x+1) |  |
| (x+2)2 |  | -(2x+1)2 |

 | 1. -2x2+32x-128

= -2(x2-16x+64) = -2(\_\_\_\_\_)(\_\_\_\_\_)

|  |  |  |
| --- | --- | --- |
|  | □x | +□ |
| ×) | □x | +□ |
|  | □x | □ |
| □x2 | □x |  |
| x2 | -16x | +64 |

 |
| 1. x2-4mx+4m2=(\_\_\_\_\_)(\_\_\_\_\_)

|  |  |  |
| --- | --- | --- |
|  | □x | □m |
| ×) | □x | □m |
|  | □mx | □m2 |
| □x2 | □mx |  |
| x2 | -4mx | +4m2 |

 | 1. 4(x+1)2+12(x+1)+9

=(\_\_\_\_\_\_\_\_\_\_)(\_\_\_\_\_\_\_\_\_\_)

|  |  |  |
| --- | --- | --- |
|  | □(x+1) | □ |
| ×) | □(x+1) | □ |
|  | □(x+1) | □ |
| □x2 | □(x+1) |  |
| 4x2 | +12(x+1) | +9 |

 |

1. 已知長方形的面積總和*ax*＋2*a*＋2*x*＋*x*2，若此長方形的長為*x*＋2，試利用因式分解法，求此長方形的寬。

|  |  |  |
| --- | --- | --- |
|  | x | +2 |
| ×) | □ | +□ |
|  | □ | □ |
| □ | □ |  |
| *x*2 | *ax*＋2*x* | ＋2*a* |

1. 整除⬄因數和倍數、因式和倍式

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1. 672÷32=

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  |  | □ | □ |
| 3 | 2 | 6 | 7 | 2 |
|  |  | □ | □ |  |
|  |  |  | □ | □ |
|  |  |  | □ | □ |
|  |  |  |  | □ |
|  | 3 | 2 |
| ×) | □ | □ |
|  | □ | □ |
| □ | □ |  |
| 6 | 7 | 2 |

672=32×( )672可以被32和( )**因數**分解32和( )是672的**因數**672是32和( )的**公倍數** | 1. (6 x2+7x+2)÷(3x+2)=

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  |  | □ | □ |
| 3x | +2 | 6 x2 | +7x | +2 |
|  |  | □ | □ |  |
|  |  |  | □ | □ |
|  |  |  | □ | □ |
|  |  |  |  | □ |
|  | 3x | +2 |
| ×) | □ | □ |
|  | □ | □ |
| □ | □ |  |
| 6x2 | +7x | +2 |

6 x2+7x+2=(3x+2)×( )6 x2+7x+2可以被(3x+2)和( )**因式**分解(3x+2)和( )是6 x2+7x+2的**因式**6 x2+7x+2是(3x+2)和( )的**公倍式** |

1. 判別下列何者不是 2*x*的倍式？ ( 10分 )
(A) 6*x*2　　(B) 6*x*2＋2　　(C) 3*x*2＋4*x*　　(D) 11*x*2

答：　甲、丙、丁、戊　。

1. 已知多項式3*x*2－3*x*－6＝3 ( *x*－2 ) ( *x*＋1 )，

判斷下列哪些是3*x*2－3*x*－6的因式，並填入空格中： ( 10分 )
 甲：*x*＋1　乙：3*x*－2　丙：3*x*－6　丁：3*x*＋3　戊：3*x*2－3*x*－6
答：　甲、丙、丁、戊　。

1. 判斷下列哪些多項式是 ( 2*x*＋6 ) ( 4*x*－3 ) 與 ( 3*x*－4 ) ( *x*＋3 ) 的公因式，並填入空格中： ( 10分 )
 甲：*x*＋3　　乙：4*x*＋12　　丙：4*x*－3　　丁：3*x*－4
答：　甲、乙　。
2. 判別3*x*2＋5*x*－4是否為3*x*－2的倍式？□是□否

如果是，請因式分解3*x*2＋5*x*－4＝　( 3*x*－2 ) ( *x*＋2 )　。

如果否，請計算(3*x*2＋5*x*－4) ÷(3x+2)= 　( 3*x*－2 ) ( *x*＋2 )　。

1. 提出公因式的因式分解

|  |  |
| --- | --- |
| 化簡下列各式 | 因式分解：提出公因式 |
| 1. 5+3

= | 1. ax+bx

= |
| 1. 5x+3x

= | 1. 3x+x2

= |
| 1. 98×3+98×7

= | 1. －*x*＋5*x*2

= |
| 1. (2x+5)×3+(2x+5)×7

= | 1. ( 1－2*x* )2＋*x* ( 2*x*－1 )

= |
| 1. (2x+5)×3x+(2x+5)×7x

= | 1. ( 3*x*－1 ) ( *x*－1 )－( *x*＋3 ) ( 1－*x* )

= |
| 1. (2x+5)×(3x+1)+(2x+5)×(7x+4)

= | 1. ( 3*bx*－2*x* )＋( *x*2－6*b* )

=

|  |  |  |
| --- | --- | --- |
|  | □ | □ |
| ×) | □ | □ |
|  | □ | □ |
| □ | □ |  |
| *x*2 | 3*bx*－2*x* | －6*b* |

 |