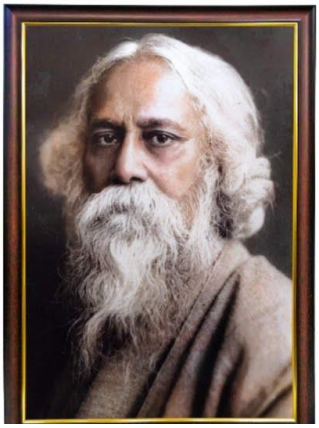
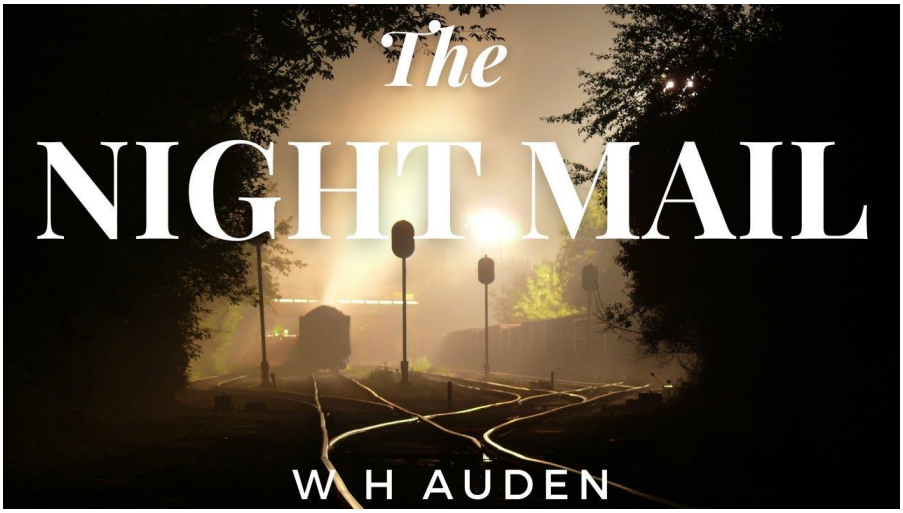

AI ART SHOP®

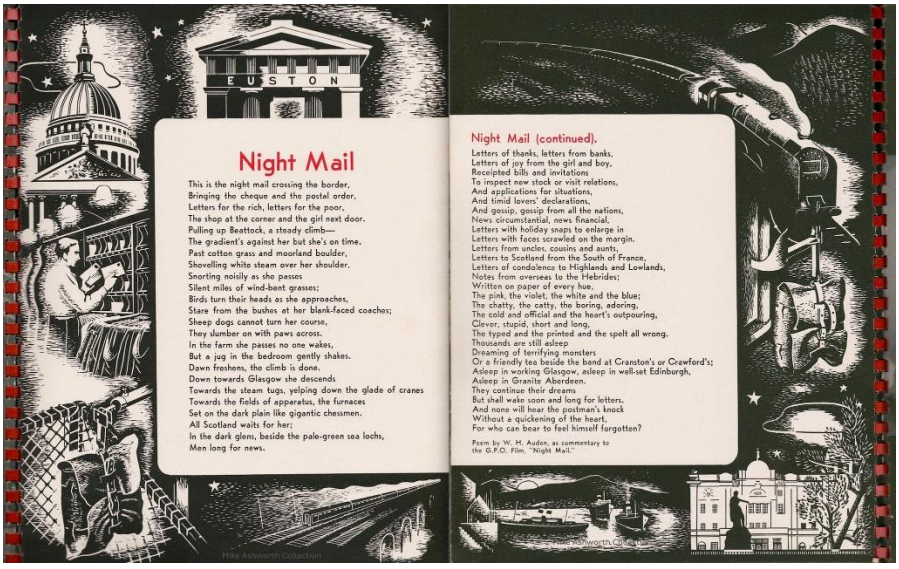
The Home Coming

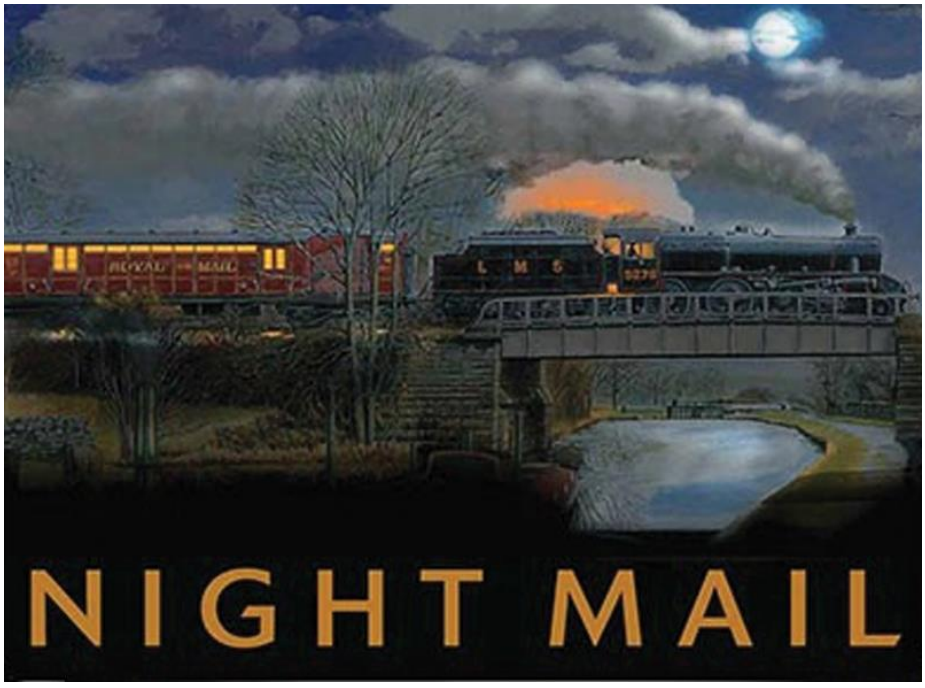
By

TAGORE

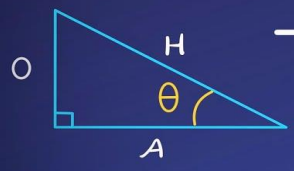



The
NIGHT MAIL
W H AUDEN


EUSTON
Night Mail
This is the night mail crossing the border,
Bringing the cheque and the postal order,
Letters for the rich, letters for the poor,
The shop at the corner and the girl next door.
Pulling up Beattock, a steady climb—
The gradient's against her but she's on time.
Past cotton grass and moorland boulder,
Shovelling white steam over her shoulder,
Snorting noisily as she passes
Silent miles of wind-bent grasses;
Birds turn their heads as she approaches,
Stare from the bushes at her blank-faced coaches;
Sheep dogs cannot turn her course,
They slumber on with paws across.
In the farm she passes no one wakes,
But a jug in the bedroom gently shakes.
Dawn freshens, the climb is done.
Down towards Glasgow she descends
Towards the steam tugs, yelping down the glade of cranes
Towards the fields of apparatus, the furnaces
Set on the dark plain like gigantic chessmen.
All Scotland waits for her;
In the dark glens, beside the pale-green sea lochs,
Men long for news.
Night Mail (continued).
Letters of thanks, letters from banks,
Letters of joy from the girl and boy,
Receipted bills and invitations
To inspect new stock or visit relations,
And applications for situations,
And timid lovers' declarations,
And gossip, gossip from all the nations,
News circumstantial, news financial,
Letters with holiday snaps to enlarge in
Letters with faces scrawled on the margin,
Letters from uncles, cousins and aunts,
Letters to Scotland from the South of France,
Letters of condolence to Highlands and Lowlands,
Notes from overseas to the Hebrides;
Written on paper of every hue,
The pink, the violet, the white and the blue;
The chatty, the catty, the boring, adoring,
The cold and official and the heart's outpouring,
Clever, stupid, short and long,
The typed and the printed and the spelt all wrong.
Thousands are still asleep
Dreaming of terrifying monsters
Or a friendly tea beside the band at Cranston's or Crawford's;
Asleep in working Glasgow, asleep in well-set Edinburgh,
Asleep in Granite Aberdeen.
They continue their dreams
But shall wake soon and long for letters,
And none will hear the postman's knock
Without a quickening of the heart,
For who can bear to feel himself forgotten?
Poem by W. H. Auden, as commentary to
the G.P.O. Film, "Night Mail."


NIGHT MAIL

Trigonometry Basics



$\sin\theta = \frac{O}{H}$ $\quad \csc\theta = \frac{1}{\sin\theta}$

$\cos\theta = \frac{A}{H}$ $\quad \sec\theta = \frac{1}{\cos\theta}$

SOH CAH TOA $\quad \tan\theta = \frac{O}{A}$ $\quad \cot\theta = \frac{1}{\tan\theta}$

Trigonometrical Ratios of Standard Angles

Ratios	0^0	30^0	45^0	60^0	90^0
Sin	0	$\frac{1}{2}$	$\frac{1}{\sqrt{2}}$	$\frac{\sqrt{3}}{2}$	1
Cos	1	$\frac{\sqrt{3}}{2}$	$\frac{1}{\sqrt{2}}$	$\frac{1}{2}$	0
Tan	0	$\frac{1}{\sqrt{3}}$	1	$\sqrt{3}$	∞ (undefined)
Cot	∞ (undefined)	$\sqrt{3}$	1	$\frac{1}{\sqrt{3}}$	0
Sec	1	$\frac{2}{\sqrt{3}}$	$\sqrt{2}$	2	∞ (undefined)
Cosec	∞ (undefined)	2	$\sqrt{2}$	$\frac{2}{\sqrt{3}}$	1

$$\sin x + \sin y = 2\sin\left(\frac{x+y}{2}\right)\cos\left(\frac{x-y}{2}\right)$$

$$\sin x - \sin y = 2\cos\left(\frac{x+y}{2}\right)\sin\left(\frac{x-y}{2}\right)$$

$$\cos x + \cos y = 2\cos\left(\frac{x+y}{2}\right)\cos\left(\frac{x-y}{2}\right)$$

$$\cos x - \cos y = -2\sin\left(\frac{x+y}{2}\right)\sin\left(\frac{x-y}{2}\right)$$

$$\tan x + \tan y = \frac{\sin(x+y)}{\cos x \cos y}$$

$$\tan x - \tan y = \frac{\sin(x-y)}{\cos x \cos y}$$

Trigonometric Ratios Of Multiple Angles

Deriving The Formula

$$\text{Sin } 2A = 2\text{SinACosA} = \frac{2\text{Tan } A}{1 + \text{Tan}^2 A}$$

Perfectnumberche...

```java
import java.util.Scanner;
public class Perfectnumbercheck
{
    public static void main(String[] args)
    {
        Scanner scanner = new Scanner(System.in);
        System.out.print("Enter a number: ");
        int num = scanner.nextInt();
        int sum = 0;
        for (int i = 1; i < num; i++)
        {
            if (num % i == 0)
            {
                sum += i;
            }
        }
        if (sum == num && num != 0) {
            System.out.println(num + " is a Perfect Number.");
        } else {
            System.out.println(num + " is NOT a Perfect Number.");
        }
    }
}

```

input

```
Enter a number: 28
28 is a Perfect Number.


...Program finished with exit code 0
Press ENTER to exit console.
```

GCD.java

```java
import java.util.Scanner;
public class GCD
{
    public static void main(String[] args)
    {
        Scanner scanner = new Scanner(System.in);
        System.out.print("Enter first number: ");
        int a = scanner.nextInt();
        System.out.print("Enter second number: ");
        int b = scanner.nextInt();
        int gcd = 1;
        for (int i = 1; i <= a && i <= b; i++)
        {
            if (a % i == 0 && b % i == 0)
            {
                gcd = i;
            }
        }
        System.out.println("GCD of " + a + " and " + b + " is: " + gcd);
    }
}

```

input

```
Enter first number: 20
Enter second number: 28
GCD of 20 and 28 is: 4


...Program finished with exit code 0
Press ENTER to exit console.
```

```java
import java.util.Scanner;
public class Series
{
    public static void main(String[] args)
    {
        Scanner scanner = new Scanner(System.in);
        System.out.print("Enter the value of a: ");
        double a = scanner.nextDouble();
        System.out.print("Enter the value of n: ");
        int n = scanner.nextInt();
        double sum = 0.0;
        for (int i = 2; i <= n; i++) {
            sum += a / i;
        }
        System.out.println("The sum of the series is: " + sum);
    }
}

```

input

```
Enter the value of a: 12
Enter the value of n: 5
The sum of the series is: 15.4


...Program finished with exit code 0
Press ENTER to exit console.
```

```java
import java.util.Scanner;
public class ArmstrongNumber {
    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);
        System.out.print("Enter a number: ");
        int num = scanner.nextInt();
        int originalNum = num;
        int digits = 0;
        int sum = 0;
        int temp = num;
        while (temp != 0) {
            temp /= 10;
            digits++;
        }
        temp = num;
        while (temp != 0) {
            int digit = temp % 10;
            sum += Math.pow(digit, digits);
            temp /= 10;
        }
        if (sum == originalNum) {
            System.out.println(originalNum + " is an Armstrong Number.");
        } else {
            System.out.println(originalNum + " is NOT an Armstrong Number.");
        }
    }
}
```

input

```
Enter a number: 9474
9474 is an Armstrong Number.


...Program finished with exit code 0
Press ENTER to exit console.
```

SumEvenOdd.java

```java
import java.util.Scanner;
public class SumEvenOdd {
    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);
        int num;
        int sumPositiveEven = 0;
        int sumNegativeOdd = 0;
        System.out.println("Enter numbers (0 to quit):");
        while (true) {
            num = scanner.nextInt();
            if (num == 0) {
                break;
            }
            if (num > 0 && num % 2 == 0) {
                sumPositiveEven += num;
            } else if (num < 0 && num % 2 != 0) {
                sumNegativeOdd += num;
            }
        }
        System.out.println("Sum of all positive even numbers: " + sumPositiveEven);
        System.out.println("Sum of all odd negative numbers: " + sumNegativeOdd);
    }
}
```

input

```
4
-3
2
-1
0
Sum of all positive even numbers: 6
Sum of all odd negative numbers: -4


...Program finished with exit code 0
Press ENTER to exit console.
```

```java
public class numbers
{
    public static void main(String[] args)
    {
        int i = 1;
        while (i <= 10)
        {
            System.out.println(i);
            i++;
        }
    }
}
```

```
1
2
3
4
5
6
7
8
9
10


...Program finished with exit code 0
Press ENTER to exit console.
```

NeonNumber.java

```java
import java.util.Scanner;
public class NeonNumber
{
    public static void main(String[] args)
    {
        Scanner scanner = new Scanner(System.in);
        System.out.print("Enter a number: ");
        int num = scanner.nextInt();
        int square = num * num;
        int sum = 0;
        int temp = square;
        do {
            int digit = temp % 10;
            sum += digit;
            temp /= 10;
        } while (temp != 0);
        if (sum == num) {
            System.out.println(num + " is a Neon Number.");
        } else {
            System.out.println(num + " is NOT a Neon Number.");
        }
    }
}
```

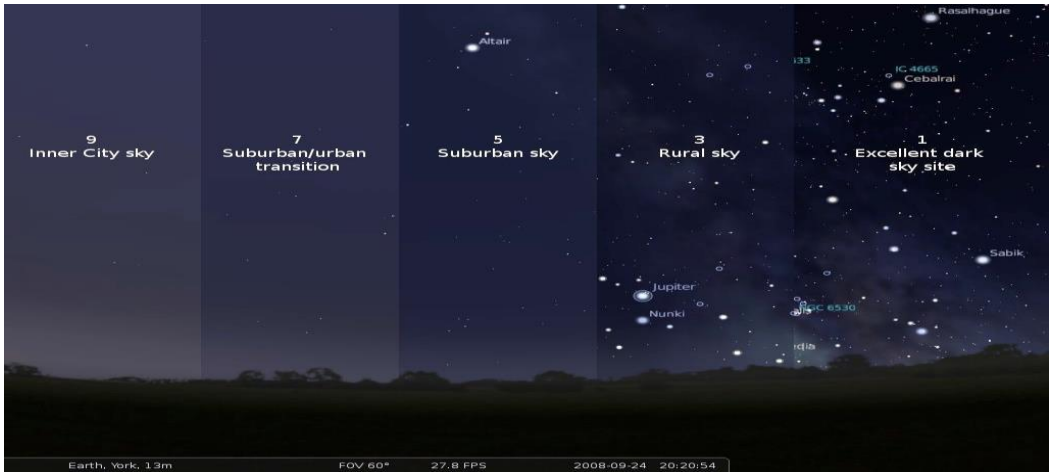
input

```
Enter a number: 9
9 is a Neon Number.


...Program finished with exit code 0
Press ENTER to exit console.
```

```java
import java.util.Scanner;
public class NivenNumber
{
    public static void main(String[] args)
    {
        Scanner scanner = new Scanner(System.in);
        System.out.print("Enter a number: ");
        int num = scanner.nextInt();
        int sum = 0;
        int temp = num;
        do {
            int digit = temp % 10;
            sum += digit;
            temp /= 10;
        } while (temp != 0);
        if (num % sum == 0) {
            System.out.println(num + " is a Niven (Harshad) Number.");
        } else {
            System.out.println(num + " is NOT a Niven Number.");
        }
    }
}
```

input

```
Enter a number: 81
81 is a Niven (Harshad) Number.


...Program finished with exit code 0
Press ENTER to exit console.
```


9
Inner City sky
7
Suburban/urban transition
5
Suburban sky
3
Rural sky
1
Excellent dark sky site
Altair
Rasalhague
IC 4665
Cebalrai
Sabik
Jupiter
Nunki
Earth, York, 13m
FOV 60°
27.8 FPS
2008-09-24 20:20:54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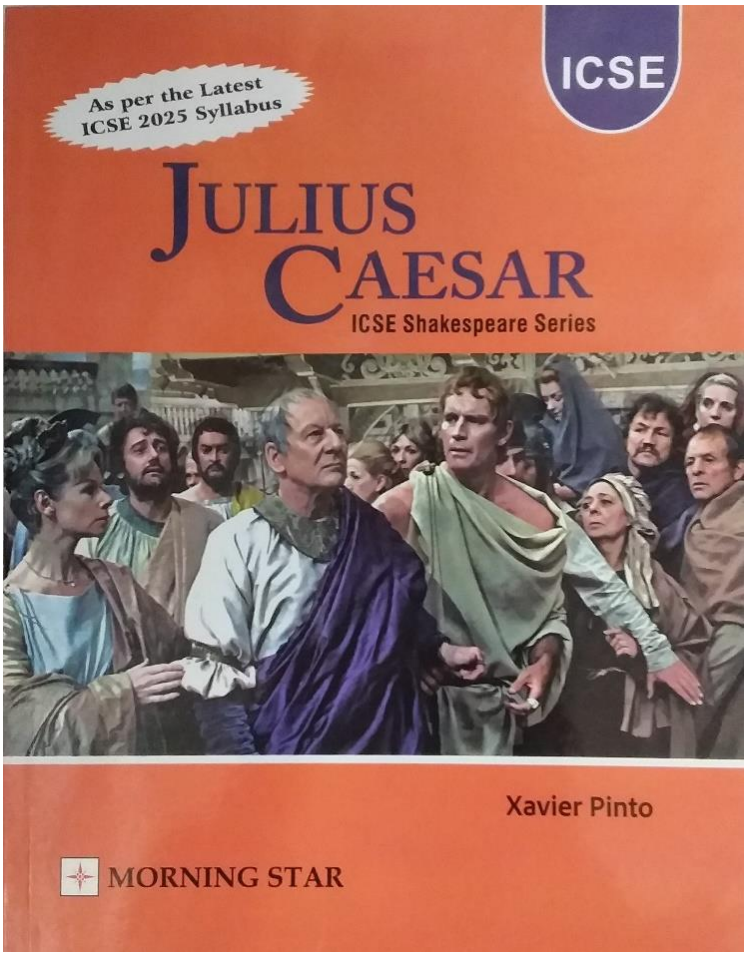
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