שיעורי בית יסודות – מספרים שלמים וראשוניים (ולולאות FOR מקוננות)

אופיר הופמן י3

תרגיל 1.א.

```
// Get number from user
Console.WriteLine("Enter a number: ");
int num = int.Parse(Console.ReadLine());

// Repeat on every number from 1 to the input number
for (int x = 1; x <= num; x++)
{
    // Sum of dividers
    int sum = 0;

    // Repeat on every sub-number
    for (int i = 1; i < x; i++)
    {

        // Check if number divides by sub-number
        if (x % i == 0)
        {
            sum += i;
        }
    }

    // Check if sum of dividers equals to the number
    if (sum == x)
    {
        Console.WriteLine(x);
    }
```

תרגיל 1.ב.

```
// Get a number from user
Console.WriteLine("Enter a number:");
int num = int.Parse(Console.ReadLine());

// Prime numbers counter
int prime = 0;

// Repeat as long as there are no more than 5 prime numbers
for (int x = 1; prime != 5 && x < num; x++)
{
    int sum = 0;
    for (int i = 1; i < x; i++)
    {
```

```
        if (x % i == 0)
        {
            sum += i;
        }
    }

    if (sum == x)
    {
        Console.WriteLine(x);
        prime++;
    }
```

תרגיל 2

```
// get number from user
Console.WriteLine("Enter a number:");
int num = int.Parse(Console.ReadLine());

// repeat on each number from 2 to input num
for (int x = 2; x <= num; x++)
{
    bool is_prime = true; // stoping condition

    // repeat on every sub-number as long as it has no dividers
    for (int i = 2; i < x && is_prime == true; i++)
    {
        if (x % i == 0)
        {
            is_prime = false;
        }
    }
    if (is_prime == true)
    {
        Console.WriteLine(x);
    }
}
```

קינון

תרגיל א

```
int num = 1;

for (int x = 1; x <= 4; x++)
{
    for (int i = num; i <= num+4; i++)
    {
        Console.Write(i);
    }

    num++;
    Console.WriteLine();
}
```

תרגיל ב

```
int num = 1;

for (int i = 1; i <= 5; i++)
{
    for (int x = 1; x <= num; x++)
    {
        Console.Write("*");
    }
    num++;
    Console.WriteLine();
}
```

תרגיל ג

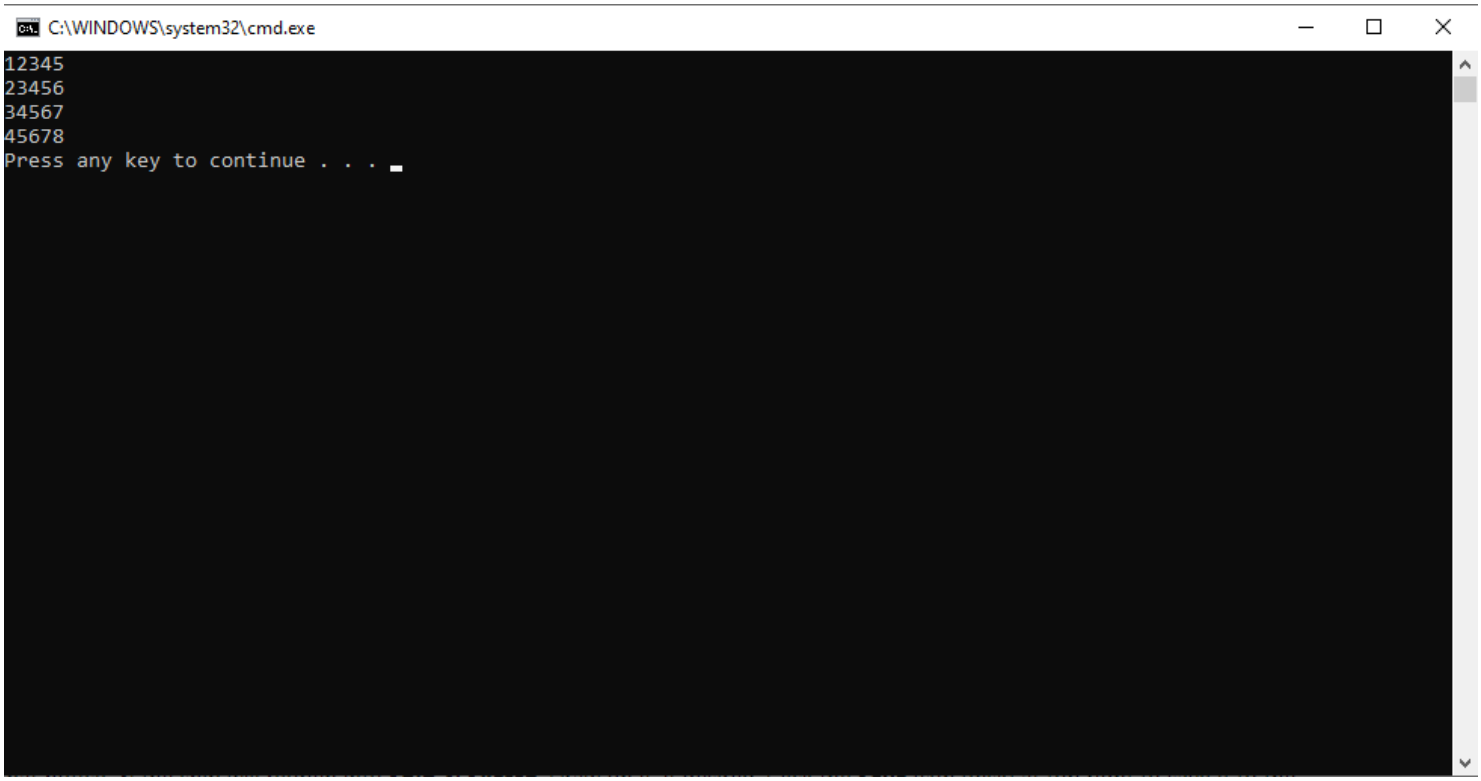
```
int num = 1;

for (int i = 1; i <= 5; i++)
{
    for (int x = 1; x <= num; x++)
    {
        Console.Write(num);
    }
    num++;
    Console.WriteLine();
}
```

תרגיל ד

```
int num = 1;

for (int i = 1; i <= 5; i++)
{
    for (int x = 1; x <= num; x++)
    {
        Console.Write("*");
    }
    num++;
    Console.WriteLine();
}
```

תרגיל ה

```
int num = 1;

for (int i = 1; i <= 5; i++)
{
    for (int x = 1; x <= num; x++)
    {
        Console.Write(num);
    }
    num++;
    Console.WriteLine();
}
```



תרגיל ו

```
int num = 1;

for (int i = 1; i <= 5; i++)
{
    for (int x = 1; x <= num; x++)
    {
        Console.Write("*");
    }
    num++;
    Console.WriteLine();
}
```

תרגיל ז

```
int num = 1;

for (int i = 1; i <= 5; i++)
{
    for (int x = 1; x <= num; x++)
    {
        Console.Write(num);
    }
    num++;
    Console.WriteLine();
}
```

תרגיל ח

```
int first = 1;
int last = 1;

for (int i = 1; i <= 5; i++)
{
    for (int x = first; x <= last; x++)
    {
        Console.Write(x);
    }
    first++;
    last += 2;
    Console.WriteLine();
}
```

תרגיל ט

```
int last = 5;

for (int i = 1; i <= 5; i++)
{
    for (int x = 5; x >= last; x--)
    {
        Console.Write(x);
    }
    last--;
    Console.WriteLine();
}
```

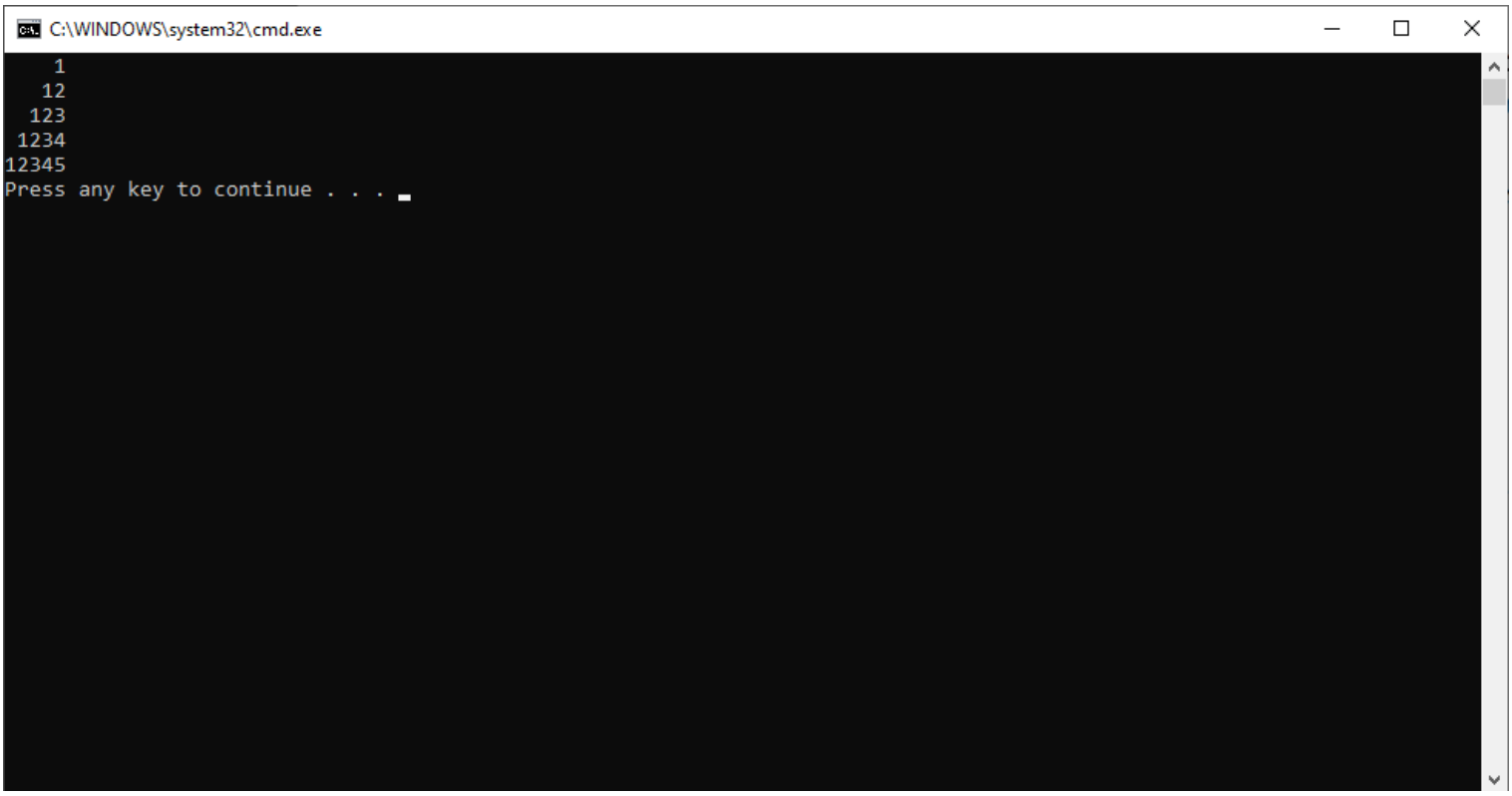
תרגיל י

```
int spaces = 4;
int stars = 1;

for (int i = 1; i <= 5; i++)
{
    for (int x = 1; x <= spaces; x++)
    {
        Console.Write(" ");
    }
    for (int y = 1; y <= stars; y++)
    {
        Console.Write("*");
```

```
    }
    spaces--;
    stars++;
    Console.WriteLine();
}
```

תרגיל יא

```
int spaces = 4;
int last = 1;

for (int i = 1; i <= 5; i++)
{
    for (int x = 1; x <= spaces; x++)
    {
        Console.Write(" ");
    }
    for (int y = 1; y <= last; y++)
    {
        Console.Write(y);
    }
    spaces--;
    last++;
    Console.WriteLine();
}
```



תרגיל יב

```
int num = 5;

for (int i = 1; i <= 5; i++)
{
    for (int x = 1; x<= num; x++)
    {
        Console.Write("*");
    }
    num--;
    Console.WriteLine();
}
```

תרגיל יג

```
int last = 1;

for (int i = 1; i <= 5; i++)
{
    for (int x = 5; x >= last; x--)
    {
        Console.Write(x);
    }
    last++;
    Console.WriteLine();
}
```