Irrational Scarf

Design: Anne Bruvold

Knit for sale, to give to someone needing a scarf or to keep!

This is knitted using the technique of illusion knit. The pattern was originally made to knit a Pi-Scarf, but can be used for making any number – also rational numbers or any number sequence.

You need

Yarn: two colours giving a good contrast.
Avoid fuzzy yarns as Mohair and similar as the numbers will be less visible. A yarn that is to be knitted using needles 2.5 mm or 3 mm is better. Thicker yarns will make a wider scarf.
Needles: A size suited for the yarn. The knitting should be firm to give a good illusion.
A crocheting hook: to correct smaller mistakes.

Illusion knit

Knit two rows in each colour, one row from the front side, one from the back side. Two rows make one ridge. The first row is always knitted from the front side and all stitches are knit. Second row is knitted from the back side and the stitches are either knit or purl depending on the pattern.

Making the scarf

Cast on 64 stitches using the colour of the numbers. Then knit one row to make the first ridge of the pattern. Alternate colours for every ridge and knit until you have 10 ridges.

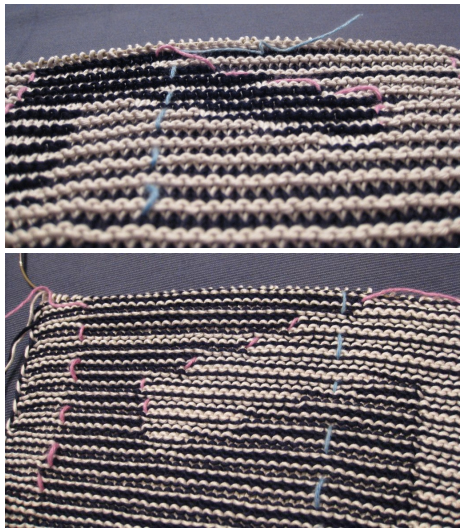
Space at the beginning
Knit 10 ridges like this:
Number colour:
1st row: all knit
2nd row: 7 knit, 50 purl 7 knit
Background colour: 1st and 2nd row: knit

Knitting the number
Knit the first digit following the diagram. Then knit a space of 5 ridges, the decimal point, space, second digit, space, third digit and so on.

Finishing off
When the scarf has the wanted length, finish like this:
Background colour: 1st and 2nd row: knit
Number colour:
1st row: all knit
2nd row: 7 knit, 50 purl 7 knit
Knit 10 ridges, all stitches knit. Cast off.

Tips:
Use a thread to mark the 7 stitches at the beginning and end of a ridge (pink tread on the photo) and the 30th stitch from the left edge (blue); to make the counting easier. You can also mark the beginning and the end of the digit being knit (also pink).

Errors are more easily spotted from the back side. Notice that dark areas of the illusion are bright viewed from the back. A common error is forgetting to switch between knit and purl and thus making a bright or dark line on the back.



Why the name "Irrational Scarf" rather than "Pi-Scarf"?

This could easily been one in a long row of Pi-scarves, but as the way the diagram is made makes it easily available for making any number. I could off course name this pattern the "Number scarf" but "Irrational Scarf" keeps the connection to π.

An irrational number is any real number that cannot be expressed as a ratio a/b, where a and b are integers (and b non-zero). Irrational numbers are those real numbers that cannot be represented as terminating decimals (as 2.25) or repeating decimals (as 1.2459459459459…).

The most commonly know irrational numbers are π, $\sqrt{2}$, Euler's number e, and the golden ratio ϕ.

Even though the pattern is primary for irrational numbers, it can off course be used for any interesting number; as the speed of light in vacuum c = 299 792 458 (measured in m/s).

Which digits to use?

Here you'll find the first digits of a selection of irrational numbers. The spaces between the digits are only to help keeping the place in the number and should not be added when knitting.

π =3,14159 26535 89793 23846 26433 83279 50288 41971 69399 37510…

e =2,71828 18284 59045 23536 02874 71352 66249 77572 47093 69995…

ϕ =1,61803 39887 49894 84820 45868 34365 63811 7720…

$\sqrt{2}$ =1,41421 35623 73095 04880 16887 24209 69807 85696 71875 37694 80731…

$\sqrt{3}$ =1,73205 08075 68877 29352 74463 41505 87236 69428 05253 81038 06280…

$\sqrt{5}$ =2,23606 79774 99789 69640 91736 68731 27623 54406 18359 61152 57242…

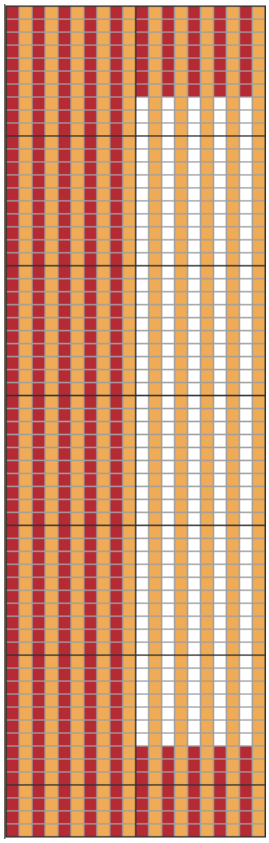
Diagrams

The diagrams are made the same way as the diagrams at Wooly Thoughts (http://woollythoughts.com/). Please do visit their pages dedicated to illusion knit (http://www.illusionknitting.woollythoughts.com/) – lots of goodies!

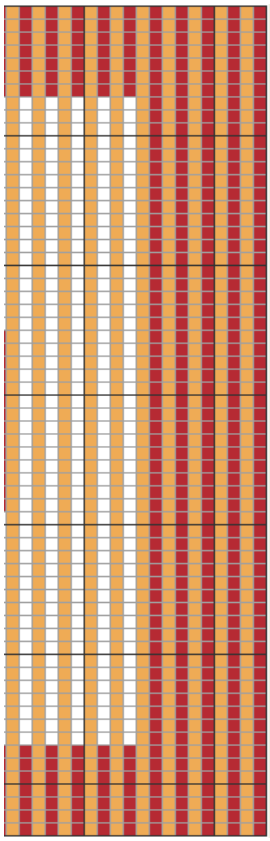
The diagram is to be read from top to bottom when knitting from the back side. Coloured squares are knit stitches, white squares are purl stitches. A vertical row represents one ridge. Two versions of the decimal point is given: , and .

Red are ridges kitted using the colour of the number, orange is the background colour.

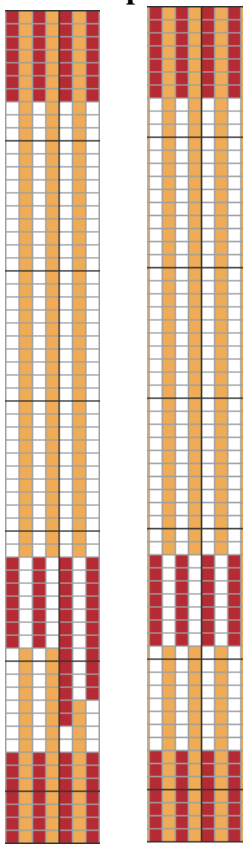
Beginning



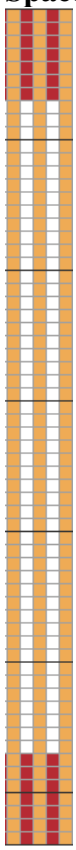
End



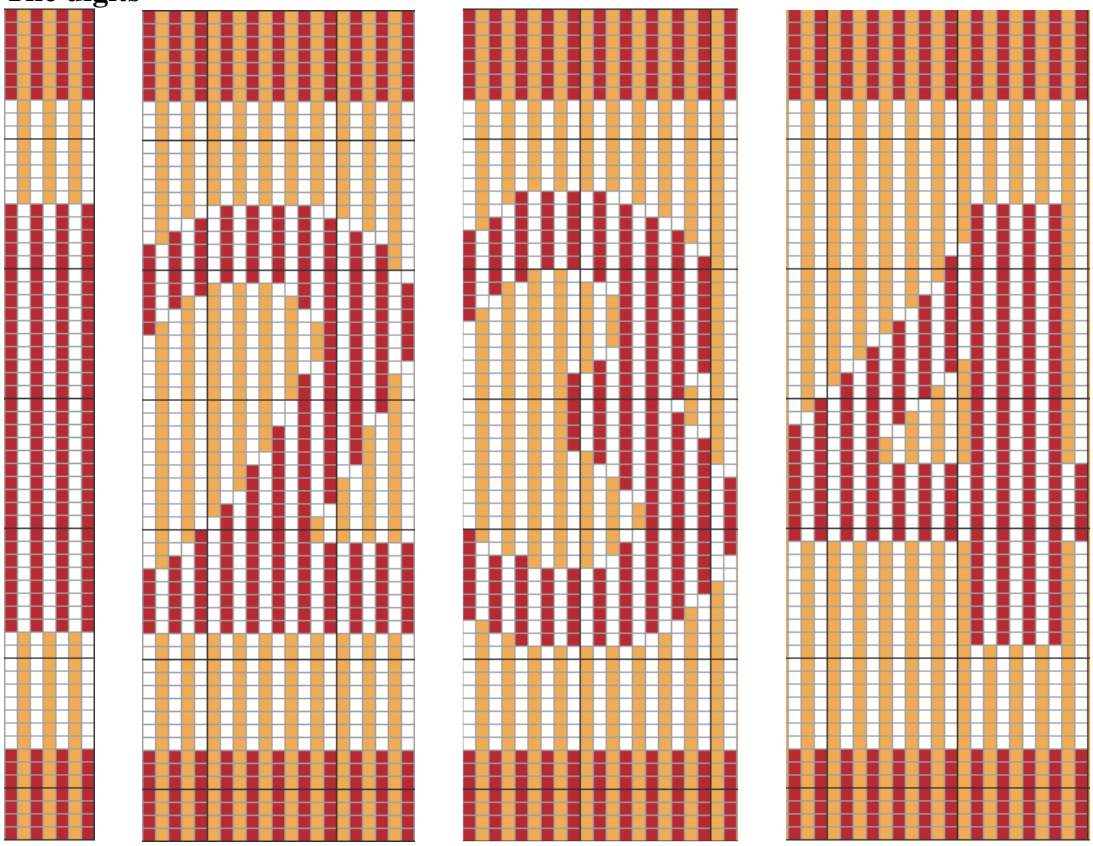
Decimal points

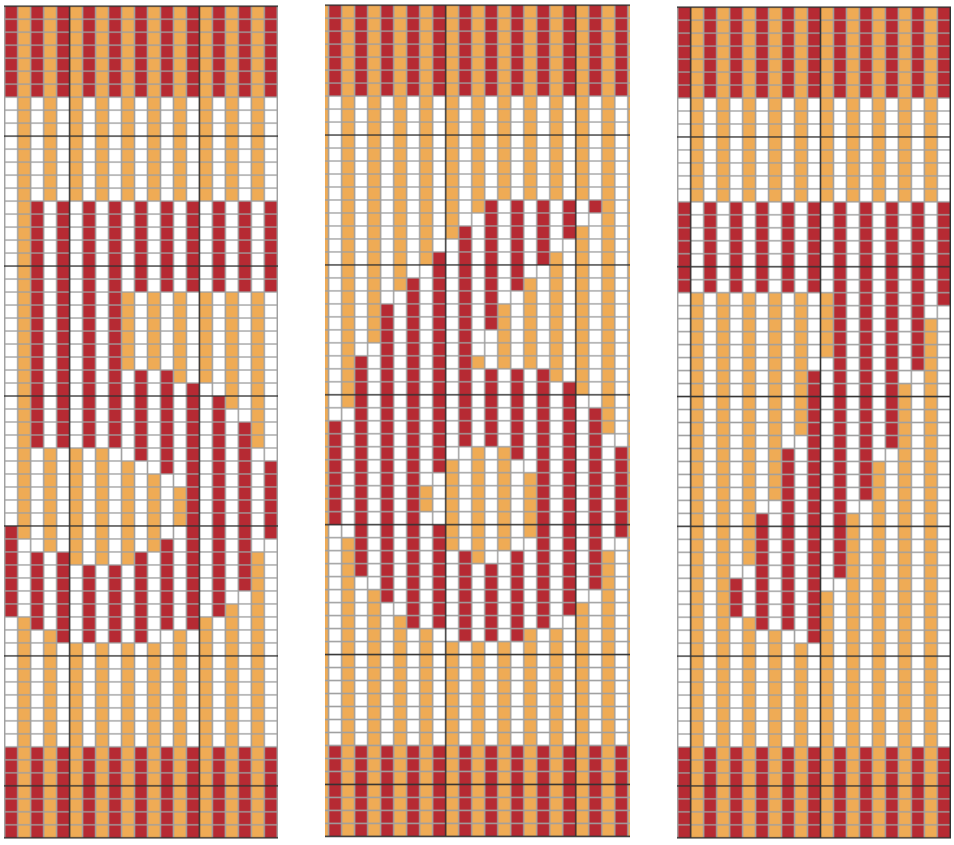


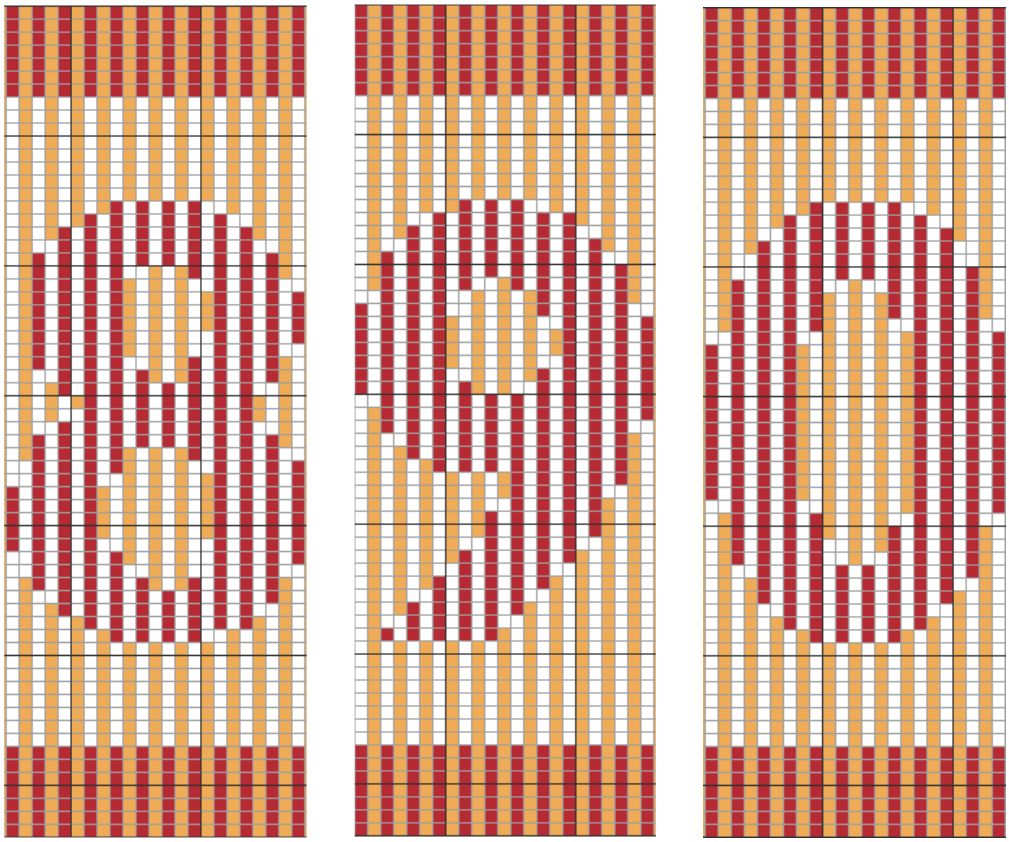
Space



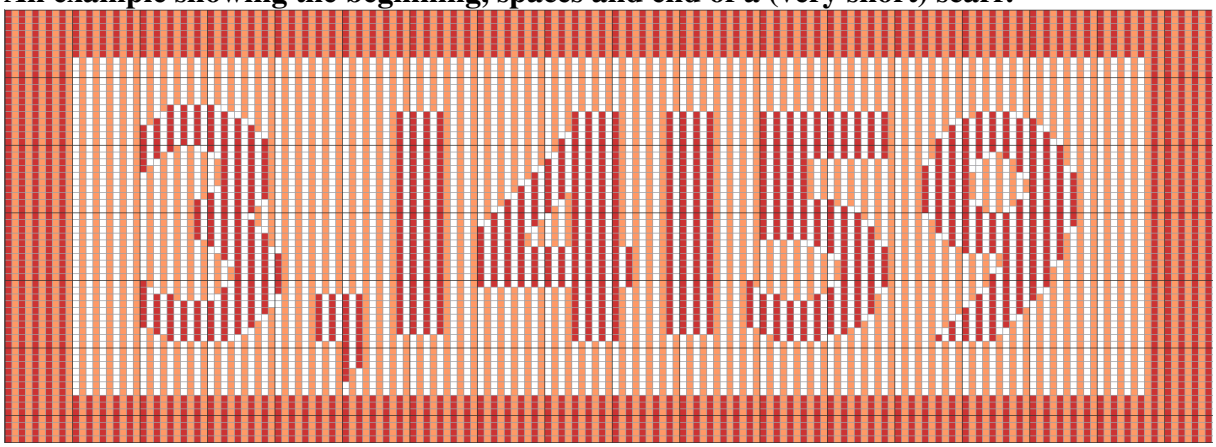
The digits







An example showing the beginning, spaces and end of a (very short) scarf:



All digits on one page