Proposal for C2Y
WG14 N3232

Title:	Round-trip rounding
Author, affiliation:	C FP group
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Proposal category:	Editorial
Reference:	N3219

This proposal addresses an issue reported to CFP by Vincent Lefevre:

> The *`_DECIMAL_DIG` macros are defined as follows:
>
> > number of decimal digits, *n*, such that any floating-point number with *p* radix *b* digits can be rounded to a floating-point number with *n* decimal digits and back again without change to the value, ...
>
> However, this is true only if rounding to nearest is used for these roundings. Ditto for the `DECIMAL_DIG` macro.

The same applies to the *`_DIG` macros.

Suggested changes (change marks relative to N3219)**:**

In 5.2.5.3.3 #31, change:

> — number of decimal digits, *n*, such that any floating-point number with *p* radix *b* digits can be rounded to a floating-point number with *n* decimal digits and back again, using to-nearest rounding for both roundings, without change to the value, ...

In 5.2.5.3.3 #31, change:

> — number of decimal digits, *n*, such that any floating-point number in the widest of the supported floating types and the supported ISO/IEC 60559 encodings with p_{max} radix *b* digits can be rounded to a floating-point number with *n* decimal digits and back again, using to-nearest rounding for both roundings, without change to the value, …

In 5.2.5.3.3 #31, change:

> — number of decimal digits, *q*, such that any floating-point number with *q* decimal digits can be rounded into a floating-point number with *p* radix *b* digits and back again, using to-nearest rounding for both roundings, without change to the *q* decimal digits, …

In H.3 #7, change:

> — number of decimal digits, *n*, such that any floating-point number with *p* bits can be rounded to a floating-point number with *n* decimal digits and back again, using to-nearest rounding for both roundings, without change to the value, …

In H.3 #7, change:

> — number of decimal digits, *q*, such that any floating-point number with *q* decimal digits can be rounded to a floating-point number with *p* bits and back again, using to-nearest rounding for both roundings, without a change to the *q* decimal digits, …