Intoduction to Modular Arithmetic, mod 10

Exercises

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1 Introduction

Modular arithmetic is a very useful way of working with numbers. It is based on looking at the remainder of a number when divided by another number. Here are some examples:

1. 25 divided by 10 has a remainder of 5, we write as

$$25 \equiv 5 (\text{mod } 10)$$

2. 20 divided by 10 has a remainder of 5 we can write as:

$$20 \equiv 0 (\text{mod } 10)$$

3. 36 divided by 10 has a remainder of 6, we can write as:

$$36 \equiv 6 (\text{mod } 10)$$

2 Exercises

Fill in the blanks for each of the following:

1. $23 \equiv$ _____(mod 10)
2. $57 \equiv$ _____(mod 10)
3. $124 \equiv$ _____(mod 10))
4. $31 + 15 \equiv$ _____(mod 10))
5. _____ $\equiv 7$(mod 10)
6. _____ $\equiv 3$(mod 10)
7. $9 + 8 \equiv$ _____(mod 10)
8. $9 + 1 \equiv$ _____(mod 10)
9. $6 +$ _____ $\equiv 0$(mod 10)
10. $3 +$ _____ $\equiv 0$(mod 10)