

# Algorithms

## CMPT 140

An algorithm is  
an ordered list of actions  
to solve a problem.

**Actions** in algorithms are:

- declarative
- feasible
- self-explanatory

## Exercise 1

For each **action** below, is it appropriate for:

- an adult human?
- a computer?

- (a) do these sunglasses make me look cool?
- (b) go swimming in the pool
- (c) read data from the USB drive
- (d) compute the sum of 5 and 2
- (e) search for the best rubber duck on the internet

## Exercise 2

Write an **algorithm** for **using a stapler to staple a pile of loose papers together**

## Exercise 3

Write an **algorithm** for **determining which of three different coins is the heaviest**

## Exercise 4

For each **algorithm**, identify the **problem** that it solves:

## Exercise 4 (ctn'd)

(a)

```
1 for each student in classroom roster:  
2     call out student's name  
3     if student does not stand up:  
4         write 'X' by student's name
```



## Exercise 4 (ctn'd)

(b)

```
1 for each item on grocery list:
2     go to aisle where item is located
3     find item on shelf
4     add item to cart
5     cross item off grocery list
```

## Exercise 4 (ctn'd)

(c)

```
1 locate signature line on paper
2 uncap pen
3 write name above the signature line
4 cap pen
```