

Though analogy is often misleading, it is the least misleading thing we have.

Samuel Butler

Analogy cannot serve as proof.

Louis Pasteur

Analogy in communication promotes understanding.

Use of analogy in nature supports creative problem solving (mechanical inventions from biological analogy)

I can solve this problem in a way similar to how that problem was solved.

Working analogy problems requires

- Spelling out ideas fully
- Formulating precise relationships of facts
- Developing correspondences between ideas
- Comparing relationships for similarities and differences

These skills are central to all problem solving.

*Gills* are related to *fish* as *lungs* are related to *humans*.

Restate:

- *Gills* are used for breathing by *fish*.
- *Lungs* are used for breathing by *humans*.

(Where did “used for breathing” come from?)

Define a “relationship sentence”:

\_\_\_\_\_ are used for breathing by \_\_\_\_\_.

The key issue in analogy problems is picking the proper relationship sentence.

*Carpenter is to saw as plumber is to wrench.*

- A \_\_\_\_\_ is a \_\_\_\_\_.
- A \_\_\_\_\_ cuts wood with a \_\_\_\_\_.
- A \_\_\_\_\_ uses a tool called a \_\_\_\_\_.

*Stewardess is to airplane as waitress is to restaurant.*

- A \_\_\_\_\_ is a(n) \_\_\_\_\_.
- A \_\_\_\_\_ works in a(n) \_\_\_\_\_.
- A \_\_\_\_\_ gives safety instructions in a(n) \_\_\_\_\_.

*Guitar* is to *pick* as *fiddle* is to *bow*.

- A \_\_\_\_\_ is played with a \_\_\_\_\_.
- A \_\_\_\_\_ is plucked with a \_\_\_\_\_.
- A \_\_\_\_\_ is a \_\_\_\_\_.

## Analogy 4

*Fence is to garden as bumper is to car.*

- A \_\_\_\_\_ helps protect a \_\_\_\_\_.
- A \_\_\_\_\_ keeps trespassers out of a \_\_\_\_\_.
- A \_\_\_\_\_ surrounds a \_\_\_\_\_.



20 is related to 10 as 50 is related to 40.

- \_\_\_\_\_ is larger than \_\_\_\_\_.
- \_\_\_\_\_ is ten more than \_\_\_\_\_.
- \_\_\_\_\_ is twice \_\_\_\_\_.
- \_\_\_\_\_ is one-half of \_\_\_\_\_.

## Analogy 6

50 is related to 48 as 67 is related to 64.

- \_\_\_\_\_ is two more than \_\_\_\_\_.
- \_\_\_\_\_ is larger than \_\_\_\_\_.
- \_\_\_\_\_ is smaller than \_\_\_\_\_.

## Define the Relationships

*Mouth is to talk as hand is to grasp.*

6 is related to 2 as 21 is related to 7.

70 is related to 30 as 35 is related to 15.

*Arrive is to depart as find is to lose.*

*Roots are to plant as mouth is to animal.*

*Peacock is to bird as tuxedo is to suit.*

50 is related to 20 as 90 is related to 60.

Now we look at the standard form of analogy problems on tests.

- One pair is given, you pick another pair that has the same relationship.
- It helps if you can define a relationship sentence.

## Analogy Problem 1

*Thermometer* is to *temperature* as \_\_\_\_\_ is to \_\_\_\_\_.

- a) telescope : astronomy
- b) clock : minutes
- c) scale : weight
- d) microscope: biologist

## Analogy Problem 2

*Horse* is to *animal* as \_\_\_\_\_ is to \_\_\_\_\_.

- a) cow : milk
- b) farm : pig
- c) oak : wood
- d) saddle : stallion

## Analogy Problem 3

2 is to 6 as \_\_\_\_\_ is to \_\_\_\_\_.

- a) 6 : 2
- b) 12 : 36
- c) 3 : 1
- d) 12 : 60

## Analogy Problem 4

*Pack* is to *wolves* as \_\_\_\_\_ is to \_\_\_\_\_.

- a) alphabet : letters
- b) wheel : spokes
- c) garage : cars
- d) aquarium : fish
- e) murder : crows



## Analogy Problem 5

Same idea, just a different format.

\_\_\_\_\_ is to dollar as year is to \_\_\_\_\_.

- a) money , calendar
- b) penny , century
- c) dime , month
- d) savings , century

## Analogy Problem 6

Try each choice. If the relationships are different, the answer is wrong. If the relationships are unclear, then hold the answer to reconsider.

\_\_\_\_\_ is to *cave* as *car* is to \_\_\_\_\_.

- a) Modern , primitive
- b) Stone , steel
- c) Primitive , modern
- d) Apartment house , horse

## Contrasts

negligence is to careful as bravery is to cowardice

## Part to whole

keyboard is to computer as trunk is to car

## Part to part

keyboard is to mouse as trunk is to hood

## Activity to result

heat is to warmth as rain is to flooding

# Some Common Types of Analogies

Individual to object

doctor is to stethoscope as painter is to brush

Measure

clock is to time as decibel is to sound

Degree of difference/similarity

cool is to frozen as breeze is to gale

Use

pencil is to write as scissors are to cut