1.Question 1

Consider the following task from a university course:

“Shakespeare’s legacy to successive generations is his firm faith in human potential.” (Bell Shakespeare Company, 2016). Discuss with reference to *Hamlet*.

What are the key terms you would need to define in order to answer this analytical task adequately?



(a). Shakespeare’s legacy



(c). What the play *Hamlet* teaches or tries to teach us



(d). What Shakespeare thinks of human potential

2.Question 2

Consider the following problem:

Two cars are stopped at either end of a 100km highway. At the same time, they both start driving towards each other. Car A travels at 20km/hr and car B travels at 30km/hr. At the same time as the cars start, a dog jumps out of Car A and runs towards car B at 50km/hr. When the dog reaches car B, he immediately turns around and runs back to car A. He repeats this until the cars collide.

If the dog stops running as soon as the cars meet, how far has he run?

Use the equation: speed = distance/time.

What SI (Standard International) unit of measurement should the answer to this problem be in?

(a). Kilometers

3.Question 3

Consider the following problem from a university course:

“A gallon of gasoline has the potential energy of approximately 276.3 MJ. Assume that a gasoline engine is driving a generator and the generator is supplying electricity to a 50 W lamp. The overall efficiency (from gasoline to electrical energy) of the engine-generator set is 15%.

How long will the lamp provide light from one gallon of gasoline?

(Adapted from: Eide, Jenison, Northup, & Mickelson, 2011, p. 392)

What SI (Standard International) unit of measurement should the answer to this problem be in?

(d). Seconds

4.Question 4

Consider the following problem:

“The building manager for a brand new apartment building in the center of the city has been receiving complaints about how slow the elevators are. As the building is still under construction, the problem is the worst at peak hour when the workers use the lifts to bring their tools and materials up to the top floors, however he still gets a lot of complaints at other times. The building manager decides to hire a work crew to come in and try and speed up the elevators, but unfortunately they tell him it isn’t possible.

The construction won’t be finished for another few months, so he needs to figure out how to get the elevators to work faster. It is starting to stress him out and the residents are getting more annoyed.

On the day that the construction crew bring in the mirrors for the apartments on level 11, he notices that he receives no complaints. The complaints start up again the next day, but oddly when the mirrors are delivered for level 12 there are no complaints either.

The manager suddenly realizes how he can reduce the number of complaints and installs mirrors next to the elevators on each floor. He also installs mirrors in each of the elevators and now only receives only one complaint a month.”

*Adapted from Fogler & LeBlanc, 2011*

What was the real problem?

(a). The residents were bored waiting for the elevators.

5.Question 5

Consider the following problem from a Landscape Architecture course:

“A local government has put out a tender for a park design in the middle of a newly-residential area. They have plotted out an area of 2 hectares in a rough polygon shape. The area is relatively flat, but is surrounded by ten-story apartment buildings on three sides, a busy road to the north and a small side-street on the last side towards the east. The local population is a mix of young families, local university students and young professionals and is very multi-cultural.

The brief for the park indicates that it should “embody the community spirit” and “encourage a fit and healthy lifestyle”. Develop a proposal that answers the brief and is both sustainable and ecological.”

When developing a brainstorm or mind-map, what would be some of the key points that you should start with?



(a). Community spirit; Fit and Healthy Lifestyle; Sustainable; Ecological



(b). Young professionals; University students; Young families



(d). Newly residential; apartment living; busy road; multi-cultural



(e). All of the above

6.Question 6

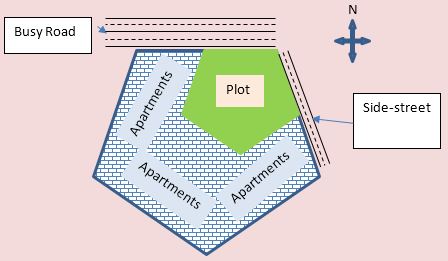
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Visual representation is a way to understand a problem. Which of the images best represents this problem?

(b).



7.Question 7

Consider the following brain-teaser problem:

"What letters are missing from the sequence?

ACE, GIK, M\_\_ \_\_, SUW "

What specialized knowledge does the question rely on?



(a). Knowledge of the English alphabet

8.Question 8

Pattern recognition is a form of problem-solving with special cases. Let’s see if you can apply it.

What letters are missing from the sequence?

ACE, GIK, M\_\_ \_\_, SUW



(a). O and Q