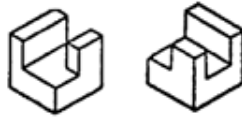
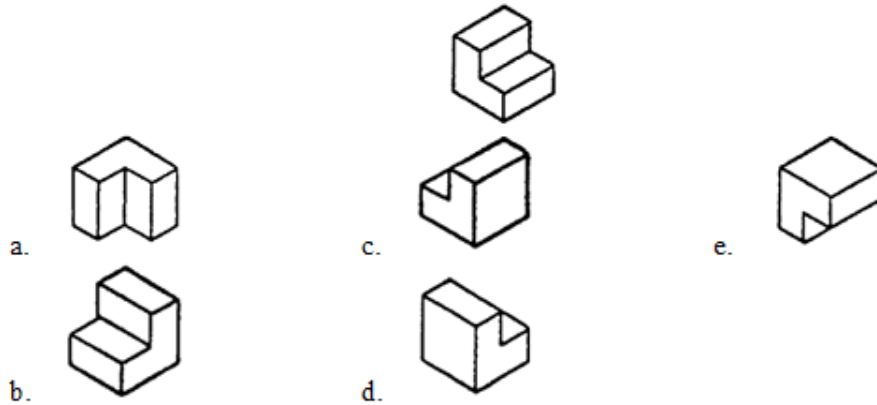


## Admissions Exam Sample Questions - Mathematics

1. All the figures in this problem are generated by cutting out parts from a cube. The figure on the left below, when rotated in a certain way, generates the figure shown on the right.



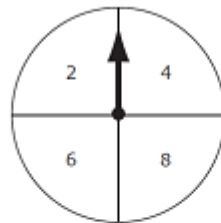
When the figure below is rotated in the same way as shown above, what figure could be generated?



2. An athletic club charges a monthly membership fee of \$52.00. Members may choose to take classes for an additional \$10 per class. Next month, the club will have a special that includes 3 free classes for new members. Which function can be used to calculate,  $C(x)$ , the total cost for a new member who takes  $x$  classes next month where  $x \geq 3$ ?

- a.  $C(x) = 10x + 52$       c.  $C(x) = 10(x-3) + 52$       e.  $C(x) = 3x + 52$   
 b.  $C(x) = 3(x-10) + 52$       d.  $C(x) = 10(x+3) + 52$

3. Pat spins the spinner below and rolls a cube with sides numbered 1 through 6 one time each.

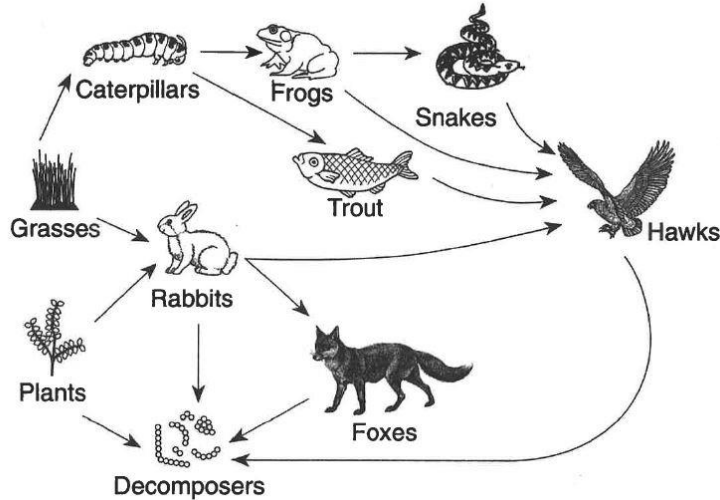


What is the probability that the spinner and number cube both land on 2?

- a.  $\frac{1}{10}$       b.  $\frac{2}{3}$       c.  $\frac{5}{12}$       d.  $\frac{1}{6}$       e.  $\frac{1}{24}$

## Admissions Exam Sample Questions – Science

1. If the population of frogs decreased, then what would increase?



- A foxes     B hawks     C caterpillars

2. Two friends, Hazel and Tom, are talking about hand sanitizers and about the need to wash with soap and water.

### Hand sanitizers and the 00.01%

Hazel says:

The hand sanitizer I use contains triclosan, a well-known antimicrobial agent and has been shown to kill 99.99% of bacteria on surfaces. I don't ever have to wash my hands with soap and water since the hand sanitizer is effective in keeping my hands germ-free. Besides, many hand soaps also contain triclosan, and so washing my hands might negatively impact ecosystems that rely on bacterial populations. Those systems can be very important for us as humans, and I don't want to mess with them.

Tom says:

The problem with triclosan is that it is not completely effective. Some bacteria are more resistant to triclosan than others, and those bacteria will eventually proliferate on your hands unless you wash them off with soap and water every once in a while. You shouldn't worry about a little triclosan going down the drain, the environment can handle it. Besides, that water gets treated at the wastewater plant anyway.

Which statement below **best** describes Tom's thoughts about Hazel's hand sanitizer?

- A Hazel's hand sanitizer will harm the environment.  
 B Hand sanitizers that contain ethanol are more effective.  
 C Hazel's hand sanitizer will lose effectiveness over time if she doesn't wash with soap and water.  
 D Hand sanitizers are ineffective.

## Admissions Exam Sample Questions – English

### WHY IT MATTERS THAT TEENS ARE READING LESS

by Jean Twenge, 2018

[1] Most of us spend much more time with digital media than we did a decade ago. But today's teens have come of age with smartphones in their pockets. Compared to teens a couple of decades ago, the way they interact with traditional media like books and movies is fundamentally different.

My co-authors and I analyzed nationally representative surveys of over one million U.S. teens collected since 1976 and discovered an almost seismic shift in how teens are spending their free time.

Increasingly, books seem to be gathering dust.

### IT'S ALL ABOUT THE SCREENS

By 2016, the average 12th grader said they spent a staggering six hours a day texting, on social media, and online during their free time. And that's just three activities; if other digital media activities were included, that estimate would surely rise.

[5] Teens didn't always spend that much time with digital media. Online time has doubled since 2006 and social media use moved from a periodic activity to a daily one. By 2016, nearly nine out of 10 12th-grade girls said they visited social media sites every day.

Meanwhile, time spent playing video games rose from under an hour a day to an hour and a half on average. One out of 10 8th graders in 2016 spent 40 hours a week or more gaming – the time commitment of a full-time job.

With only so much time in the day, doesn't something have to give?

Maybe not. Many scholars have insisted that time online does not displace time spent engaging with traditional media. Some people are just more interested in media and entertainment, they point out, so more of one type of media doesn't necessarily mean less of the other.

However, that doesn't tell us much about what happens across a whole cohort of people when time spent on digital media grows and grows. This is what large surveys conducted over the course of many years can tell us.

### MOVIES AND BOOKS GO BY THE WAYSIDE

[10] While 70% of 8th and 10th graders once went to the movies once a month or more, now only about half do. Going to the movies was equally popular from the late 1970s to the mid-2000s, suggesting that Blockbuster video and VCRs didn't kill going to the movies.

But after 2007 – when Netflix introduced its video streaming service – moviegoing began to lose its appeal. More and more, watching a movie became a solitary experience. This fits a larger pattern: In another analysis, we found that today's teens go out with their friends considerably less than previous generations did.

But the trends in moviegoing pale in comparison to the largest change we found: An enormous decline in reading. In 1980, 60% of 12th graders said they read a book, newspaper or magazine every day that wasn't assigned for school.

By 2016, only 16% did – a huge drop, even though the book, newspaper or magazine could be one read on a digital device (the survey question doesn't specify format).

The number of 12th graders who said they had not read any books for pleasure in the last year nearly tripled, landing at one out of three by 2016. For iGen – the generation born since 1995 who has spent their entire adolescence with smartphones – books, newspapers and magazines have less and less of a presence in their daily lives.

[15] Of course, teens are still reading. But they're reading short texts and Instagram captions, not longform articles that explore deep themes and require critical thinking and reflection. Perhaps as a result, SAT reading scores in 2016 were the lowest they have ever been since record keeping began in 1972.

It doesn't bode well for their transition to college, either. Imagine going from reading two-sentence captions to trying to read even five pages of an 800-page college textbook at one sitting. Reading and comprehending longer books and chapters takes practice, and teens aren't getting that practice.

There was a study from the Pew Research Center a few years ago finding that young people actually read more books than older people. But that included books for school and didn't control for age. When we look at pleasure reading across time, iGen is reading markedly less than previous generations.

#### THE WAY FORWARD

So should we wrest smartphones from iGen's hands and replace them with paper books?

Probably not: smartphones are teens' main form of social communication.

[20] However, that doesn't mean they need to be on them constantly. Data connecting excessive digital media time to mental health issues suggests a limit of two hours a day of free time spent with screens, a restriction that will also allow time for other activities – like going to the movies with friends or reading.

Of the trends we found, the pronounced decline in reading is likely to have the biggest negative impact. Reading books and longer articles is one of the best ways to learn how to think critically, understand complex issues and separate fact from fiction. It's crucial for being an informed voter, an involved citizen, a successful college student and a productive employee.

If print starts to die, a lot will go with it.

Which statement identifies the central idea of the text?

- The time that teenagers spend with digital media negatively impacts their ability to make sense of longer and more complex written material.
- Teenagers are not developing the social skills they need to succeed in the world, as digital devices encourage them to spend time alone.
- Fast-paced games and constantly updating social media makes it difficult for teenagers to be entertained by paper media, such as books and magazines.
- The time that teenagers spend playing video games or on social media takes away from their commitment to their studies, negatively affecting their grades.

Which detail from the text best supports your answer to #1?

- a. "One out of 10 8th graders in 2016 spent 40 hours a week or more gaming – the time commitment of a full-time job." (Paragraph 6)
- b. "In another analysis, we found that today's teens go out with their friends considerably less than previous generations did." (Paragraph 11)
- c. "Of course, teens are still reading. But they're reading short texts and Instagram captions, not longform articles that explore deep themes and require critical thinking and reflection." (Paragraph 15)
- d. "Data connecting excessive digital media time to mental health issues suggests a limit of two hours a day of free time spent with screens..." (Paragraph 20)

Which of the following describes the author's main purpose in the text?

- a. to offer teenagers fun and engaging alternatives to spending time with digital media
- b. to emphasize the disadvantages of spending more time online and less time reading
- c. to show how reading from digital devices is not as beneficial as reading from paper sources
- d. to speculate how teenagers will be impacted in the future if they continue to rely on digital devices

What connection does the author draw between new digital media and movies?

- a. The author shows how digital media has negatively impacted teenagers' engagement in other activities, such as going to the movies.
- b. The author highlights the disadvantages of spending more time streaming movies alone, than going to the theater with friends.
- c. The author shows how new digital media and movies both discourage teenagers from reading for pleasure.
- d. The author discusses how new digital media doesn't require teenagers to engage in complex thought, as movies once did.

What does the word "seismic" in paragraph 2 mean as it is used in the text?

- a. digital
- b. complex
- c. small
- d. tremendous

## Admissions Exam Sample Essay

You are serving on a committee that will design a new high school for your community. Choose one feature for the new high school that you will suggest to the design committee. Write a 4-5 paragraph report to the committee, explaining what this feature is and why it is beneficial. Be sure to support your opinion with convincing reasons and evidence.

Use examples from your life to support your ideas. Be sure to have a clear introduction, body paragraphs and a conclusion. Write clearly, neatly, and use language you are comfortable with.

You may use the space below to plan your essay, but the essay itself should be written on the lined paper.