

As questões de 1 a 7 referem-se ao texto a seguir:

### A HISTORY OF PI

1 The history of Pi, says the author, though a small part of the history of mathematics, is nevertheless a mirror of the history of man. Petr Beckmann holds up this mirror, giving the background of the times when Pi made progress — and also when it did not, because science was being stifled by militarism or religious fanaticism. The mathematical level of this book is flexible, and there is plenty for readers of all ages and interests.

#### 5 ABOUT THE AUTHOR

Petr Beckmann was born in Prague, Czechoslovakia, in 1924. Until 1963, he worked as a research scientist for the Czechoslovak Academy of Sciences, when he was invited as a Visiting Professor to the University of Colorado, where he decided to stay permanently as professor of electrical engineering.

10 Dr. Beckmann has authored 11 books and more than 50 scientific papers, mostly on probability theory and electromagnetic wave propagation. History is one of his side interests; another is linguistics (he is fluent in five languages and he has worked out a new generative grammar which enables a computer to construct trillions of grammatical sentences from a dictionary of less than 100 unprocessed words).

15 He also publishes a monthly pro-science, pro-technology, pro-free enterprise newsletter *Access to Energy*, in which he promotes the viewpoint that clean energy can be made plentiful, but that access to it is blocked by government interference and environmental paranoia.

BECKMANN, Petr. *A History of Pi*. New York: Barnes & Noble Books, 1983.

**Questão 1.** O texto foi extraído de um(a)

- A ( ) aba / orelha de livro.
- B ( ) prefácio de livro.
- C ( ) roteiro de leitura.
- D ( ) resenha literária.
- E ( ) ensaio literário.

**Questão 2.** O livro *A History of Pi*

- A ( ) descreve grande parte da história da matemática e da humanidade.
- B ( ) é direcionado apenas para iniciantes em matemática.
- C ( ) conta a história de Petr Beckmann em tempos de repressão ao conhecimento.
- D ( ) associa conceitos matemáticos a fatos da vida cotidiana.
- E ( ) é acessível a um público diversificado.

**Questão 3.** No contexto deste texto, o item lexical “stifled” (linha 3) pode ser traduzido por

- A ( ) sufocada.
- B ( ) desmascarada.
- C ( ) organizada.
- D ( ) promulgada.
- E ( ) institucionalizada.

**Questão 4.** Dentre os interesses de Petr Beckmann, NÃO se encontra(m)

- A ( ) a divulgação científica.
- B ( ) a Geografia.
- C ( ) a História.
- D ( ) a pesquisa científica.
- E ( ) as línguas estrangeiras.

**Questão 5.** Indique o item lexical que pode substituir o sublinhado no trecho “... mostly on probability theory and electromagnetic wave propagation.” (linhas 11 e 12), sem prejudicar o seu sentido.

A ( ) absolutely

B ( ) chiefly

C ( ) inherently

D ( ) randomly

E ( ) utterly

**Questão 6.** A opção que contém a reescrita correta de “... **science was being stifled by militarism or religious fanaticism.**” (linha 3) é: *Militarism or religious fanaticism*

A ( ) were stifling science.

B ( ) had been stifling science.

C ( ) were being stifling science.

D ( ) has stifling science.

E ( ) have been stifling science.

**Questão 7.** Indique a alternativa que contém a referência correta para o termo sublinhado.

A ( ) “giving the background of the times when Pi made progress ...” (linha 2) → background

B ( ) “Petr Beckmann holds up this mirror, giving the background of the times when Pi made progress — and also when it did not ...” (linhas 2 e 3) → mirror

C ( ) “Until 1963, he worked as a research scientist for the Czechoslovak Academy of Sciences, when he was invited ...” (linhas 8 e 9) → research scientist

D ( ) “he is fluent in five languages and he has worked out a new generative grammar which enables a computer to construct ...” (linhas 12 e 13) → five languages

E ( ) “He also publishes a monthly pro-science, pro-technology, pro-free enterprise newsletter *Access to Energy*, in which he promotes the viewpoint ...” (linha 15 e 16) → newsletter *Access to Energy*

**As questões de 8 a 10 referem-se ao texto a seguir:**

1 Harvard conducted one of the longest and most comprehensive studies of human development — the 75 year old Grant Study — that’s reached some fascinating conclusions regarding the recipe for leading a happy life. The sample group was comprised of healthy male Harvard college students who, over the course of their lifetime, agreed to meet with an array of scientists and researchers who measured their psychological, physical and anthropological traits. Though all identities are confidential, it was recently discovered that John F. Kennedy was a sample participant. Following these men through times of war, their careers, parenthood and old age, the Grant Study has amassed an exorbitant amount of data that deeply reflects the human condition. What can be concluded from seven decades of data? It is quite simple actually; warm relationships between parents, spouses, children and friends have the greatest impact on your health and happiness in old age. The study found that 93 percent of the sample group who were thriving at age 65, had a close relationship with a sibling when they were younger. As George Vaillant, the lead director of the study states, it can all be boiled down into five simple words: “Happiness is love. Full stop.” (*Business Insider*.)

<http://www.goodnet.org/articles/1055> (acesso em 10/06/2013).

**Questão 8.** A **Grant Study**, pesquisa realizada pela Universidade de Harvard,

A ( ) teve por objetivo investigar o comportamento de pessoas idosas e felizes.

B ( ) possibilitou o levantamento gigantesco de dados sobre pesquisadores de Harvard.

C ( ) comprovou que John F. Kennedy foi um homem extremamente feliz.

D ( ) chama-se *the 75 year old Grant Study* por ser homenagem à faixa etária analisada.

E ( ) comprovou que felicidade na vida adulta está atrelada às relações afetivas ao longo da vida.

**Questão 9.** Assinale a opção cuja reescrita não altera o sentido de: “**Though all identities are confidential, it was recently discovered that John F. Kennedy was a sample participant.**” (linha 5)

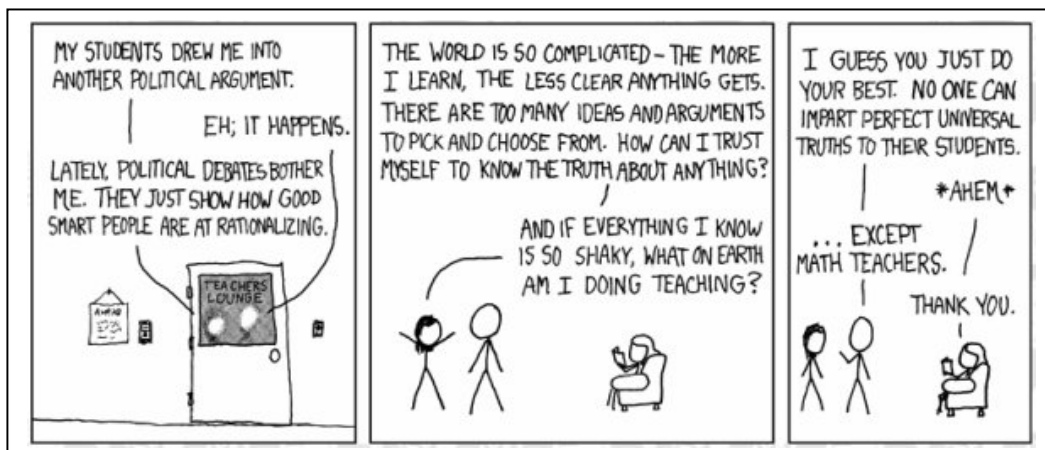
- A ( ) John F. Kennedy was a sample participant, although nobody knew that.
- B ( ) In spite of being a sample participant, John F. Kennedy’s identity was never discovered.
- C ( ) The study was confidential, thus the participation of John F. Kennedy was never discovered.
- D ( ) Besides being a confidential study, John F. Kennedy said he used to be a participant.
- E ( ) In spite of the fact that all identities are kept confidential, it was recently found out that John F. Kennedy was a sample participant.

**Questão 10.** Substituindo os adjetivos **long** e **comprehensive**, respectivamente, por **easy** e **rich** na oração “**Harvard conducted one of the longest and most comprehensive studies of human development**” (linha 1), teremos:

- A ( ) the most easy - the richest
- B ( ) the easiest - the most rich
- C ( ) the more easy - the richer
- D ( ) the easiest - the richest
- E ( ) the most easy - the most rich

**As questões 11 e 12 referem-se à tirinha a seguir:**

Is this what really goes on in the staff room?



[http://www.math-problem-solving.com/funny\\_math\\_cartoons.html](http://www.math-problem-solving.com/funny_math_cartoons.html) (acesso em 10/06/2013).

**Questão 11.** Pelo contexto, pode-se depreender que os personagens são

- A ( ) dois alunos e um professor de matemática.
- B ( ) um aluno e dois professores de matemática.
- C ( ) pelo menos um professor de matemática.
- D ( ) três professores de matemática.
- E ( ) de identificação impossível.

**Questão 12.** Em “**the more I learn, the less clear anything gets**”, mantém-se o mesmo sentido em:

- A ( ) more learning, less obscurity.
- B ( ) more learning, more obscurity.
- C ( ) less learning, more obscurity.
- D ( ) less learning, less doubts.
- E ( ) more doubts, more obscurity.

As questões de 13 a 20 referem-se ao texto a seguir:

### DISTANT PEAK CAR

Carmakers worry that one day demand for cars will stop rising. But that is a long way off.

1 IN 1924 FORD ran an advertisement headlined “His First Car”, urging fathers to buy their teenage sons their first set of wheels. The idea caught on. For boys, especially, learning to drive became an essential part of growing up. By the late 1970s 86% of American 18-year-olds—of both sexes—had a driving licence. But then the trend went into reverse: researchers at the University of Michigan found that in 2010 only 61% of 18-year-old Americans had licences.  
5 Other rich countries are going the same way. Teenagers are showing less interest in cars as they turn their attention to smartphones and social networking.

This is a worry for carmakers, who are wondering where their future customers are going to come from. In the two decades to 2008 the number of miles driven by Americans in their 20s fell by 8%. In Britain a study for the RAC Foundation, a transport-research body, found a 30% drop among men in the same age group between 1996 and  
10 2006.

One reason for concern is that half the world’s population now lives in towns and cities, which have only so much space for cars. Even in rapidly growing car markets such as China, city governments in the more prosperous parts of the country are beginning to restrict new car registrations and invest heavily in public transport.

Young urban residents may also be meeting up less often in person, thanks to social-networking sites that let  
15 them keep in touch digitally. So they have less need for a car, and when they do need one they turn to car clubs, which offer rental by the hour in their neighbourhood, and to car-sharing schemes. In particular, the generation who came of age after 2000, the so-called “millennials”, express a preference for having access to rather than owning cars. But some of that may be just talk. In a survey by McKinsey, American millennials said they expected to use car clubs in the future, but when asked if owning a car would remain an important status symbol, they were much more likely to  
20 answer “yes” than older consumers.

Economic factors, too, work against car ownership. Sheryl Connelly, Ford’s “global trends and futuring” manager, notes that a few decades ago teenagers in America often got free driving lessons at school, but now they may have to pay up to \$800 for them before they can sit their test. The cost of adding a young driver to the family’s car-insurance policy too has risen sharply, she says. In Britain the RAC Foundation study found that fewer young men  
25 are driving because their employers have cut back on providing company cars.

However, studies also show a marked rise in the proportion of elderly people with driving licences. Baby-boomers pretty much all learned to drive, and now that they are beginning to retire they expect to continue motoring. The development of assisted driving, followed one day by fully automated cars, will allow them to stay mobile for much longer.

30 What may be happening in rich countries is a one-off shift in the timing of people’s driving careers, so that they start later but then continue well into old age. This may be no bad thing for carmakers. It has long been an open secret in the business that cars are advertised as being for the young but are bought mainly by the middle-aged with the necessary disposable income. In America the average Mercedes buyer is in his late 50s, and even the supposedly youth-oriented MINI Cooper is typically bought by people in their early 40s. The world’s biggest car markets—China,  
35 North America and Europe—are all greying.

So it is not clear that declining car ownership among young urbanites will have more than a marginal effect on overall car sales. Besides, argues Renault-Nissan’s Mr Ghosn, for most people “their car is more than an object.” For some it is an extension of their home, he says, and most people would rather not share their home. For others it is their pet, and who wants to share their pet?

40 All in all, “peak car”—the point at which worldwide demand for cars will stop rising—still seems quite a long way off. In the rich world some of the economic factors that have deterred young people from taking up driving will fade away: as cars become increasingly self-piloting and accident rates fall, insurance costs should decrease, and in time there will be little or no need to take expensive lessons.

*The Economist*, April 20th, 2013.

**Questão 13.** Uma das razões para o menor uso de carros por jovens nos últimos anos é o(a)

- A ( ) desinteresse em usar carro como símbolo de status social.
- B ( ) realização de festas em clubes particulares.
- C ( ) falta de segurança nas grandes cidades.
- D ( ) uso de redes sociais digitais.
- E ( ) insuficiência de estacionamentos e alto custo das vagas privativas.

**Questão 14.** Assinale a opção em que a retirada do termo sublinhado compromete o sentido da oração.

- A ( ) “For boys, especially, learning to drive became an essential part of growing up.” (linha 2)
- B ( ) “... to restrict new car registrations and invest heavily in public transport.” (linha 13)
- C ( ) “... they were much more likely to answer “yes” than older consumers.” (linhas 19 e 20)
- D ( ) “The cost of adding a young driver to the family’s car-insurance policy too has risen sharply ...” (linhas 23 e 24)
- E ( ) “... cars are advertised as being for the young but are bought mainly by the middle-aged ...” (linha 32)

**Questão 15.** Considere as sentenças:

- I. A geração *millennials* não se incomoda com *status* social.
- II. A geração *millennials* já atingiu os 40 anos de idade.
- III. A geração *baby boomers* faz parte dos apreciadores da fabricante de carros Mercedes.

Está(ão) correta(s)

- A ( ) apenas I.
- B ( ) apenas II.
- C ( ) apenas III.
- D ( ) apenas I e II.
- E ( ) apenas I e III.

**Questão 16.** Assinale a opção correta.

- A ( ) O modelo *MINI Cooper* foi idealizado para o público consumidor jovem, apesar da maior comercialização para pessoas na faixa dos 40 anos.
- B ( ) O mercado automobilístico em ascensão é constituído exclusivamente por consumidores aposentados.
- C ( ) De acordo com a Fundação *RAC*, houve uma queda de 30% nos percursos feitos pelos americanos.
- D ( ) O declínio de vendas de carro para o público jovem está diretamente relacionado ao alto custo de aulas de direção.
- E ( ) Veículos fretados e transporte solidário estão entre as opções dos jovens chineses que não compram veículos.

**Questão 17.** Assinale a opção em que o emprego sintático do item lexical **that** é diferente dos demais.

- A ( ) “... researchers at the University of Michigan found that ...” (linha 4)
- B ( ) “One reason for concern is that ...” (linha 11)
- C ( ) “... thanks to social-networking sites that ...” (linha 14)
- D ( ) “Sheryl Connelly, Ford’s “global trends and futuring” manager, notes that ...” (linhas 21 e 22)
- E ( ) “So it is not clear that ...” (linha 36)

**Questão 18.** De acordo com o texto, a expressão “**a long way off**” (no subtítulo e nas linhas 40 e 41) pode ser entendida como

- A ( ) eminente retrocesso.
- B ( ) acontecimento a longo prazo.
- C ( ) grande possibilidade.
- D ( ) evento fora de cogitação.
- E ( ) preocupação factível.

**Questão 19.** A expressão “**this is a worry for carmakers**” (linha 7) resgata o(a)

- A** ( ) decréscimo do número de habilitações para motoristas britânicos.
- B** ( ) generalização da baixa venda de veículos.
- C** ( ) pequena disponibilidade de estacionamento.
- D** ( ) menor interesse dos jovens por carros.
- E** ( ) demora no amadurecimento dos adolescentes americanos.

**Questão 20.** Considere as sentenças:

- I. Houve queda no número de motoristas na Inglaterra até 1996.
- II. No passado, estudantes americanos geralmente tinham aulas gratuitas de direção.
- III. A propaganda “His First Car” tinha como público alvo pais de jovens rapazes.

Está(ão) correta(s)

- |                             |                               |                          |
|-----------------------------|-------------------------------|--------------------------|
| <b>A</b> ( ) apenas I.      | <b>B</b> ( ) apenas II.       | <b>C</b> ( ) apenas III. |
| <b>D</b> ( ) apenas I e II. | <b>E</b> ( ) apenas II e III. |                          |