

Morning Reading

Grade 11 · AS · Week 11

Read each word aloud, then copy the English word three times.

Reading

Read the passage aloud twice.

How big is an economy? Add up the value of everything produced inside the country in a year and you get the **gross domestic product**. But be careful with rising prices: **nominal** GDP can grow while the country actually makes no more than before. **Real** GDP removes the effect of inflation, and dividing by the population gives GDP **per capita**, a rough measure of the average person’s income. Rough, because it says nothing about how income is shared, or about unpaid work at home.

An ambulance races past and its siren drops in pitch as it passes. This is the **Doppler effect**: waves from an approaching **source** reach the **observer** squeezed together, at higher frequency; as the source leaves, the waves stretch out. Astronomers use exactly this to show distant galaxies rushing away from us.

To keep data honest on its journey, computers add checks: a **parity check** counts ones, a **checksum** sums the bytes, and **encryption** with a **public key** and a **private key** keeps the content secret.

Talk about it :

1. Nominal GDP rose 5%, inflation was 5%. Did the economy really grow?
2. Where else have you heard the Doppler effect? Describe the sound.

Physics

Topics 7–8 · Waves, Superposition

— transmission axis			
/træn'smɪʃn 'æksɪs/			
% Malus’s law			
/'mæləsɪz lɔː/			
↗ vector sum			
/'vektə sʌm/			
≡ superposition			
/,suːpəpə'zɪʃn/			
+ constructive interference			
/kən'strʌktɪv ,ɪntə'fɪərəns/			
∨ trough			
/trɒf/			
— destructive interference			
/dɪ'strʌktɪv ,ɪntə'fɪərəns/			
Λ stationary wave			
/'steɪʃənəri weɪv/			
[:] reflected			
/rɪ'flektɪd/			
• node			
/nɒd/			
○ antinode			
/,æntɪ'nɒd/			
↔ antiphase			
/,æntɪ'feɪz/			
□ resonance tube			
/'rezənəns tjʊːb/			
— fundamental			
/ˌfʌndə'mentl/			
▣ diffraction			
/dɪ'frækʃn/			

 obstacle	_____	_____	_____
/ˈɒbstəkl/			
 ripple tank	_____	_____	_____
/ˈrɪpl tæŋk/			
 interference	_____	_____	_____
/ˌɪntəˈfɪərəns/			
= coherent	_____	_____	_____
/kəʊˈhiərənt/			
— slit	_____	_____	_____
/slɪt/			

Chemistry

Topics 7–10 · Equilibria, Reaction kinetics, The Periodic Table: chemical periodicity, Group 2

 indicator	_____	_____	_____
/ˈɪndɪkeɪtə/			
 rate of reaction	_____	_____	_____
/reɪt ɒv riˈækʃn/			
 collision frequency	_____	_____	_____
/kəˈlɪʒn ˈfriːkwənsi/			
 effective collision	_____	_____	_____
/ɪˈfektɪv kəˈlɪʒn/			
 non-effective collision	_____	_____	_____
/nɒn ɪˈfektɪv kəˈlɪʒn/			
 Boltzmann distribution	_____	_____	_____
/ˈbɒltsmən ˌdɪstriˈbjʊːʃn/			
 catalysis	_____	_____	_____
/kæˈtæləsɪs/			
 reaction mechanism	_____	_____	_____
/rɪˈækʃn ˈmekənɪzəm/			

 homogeneous catalyst	_____	_____	_____
/həˈmædʒɪniəs ˈkætəlɪst/			
 heterogeneous catalyst	_____	_____	_____
/ˌhetrəˈdʒɪniəs ˈkætəlɪst/			
 periodicity	_____	_____	_____
/ˌpɪərɪˌɒˈdɪsɪti/			
 valence shell	_____	_____	_____
/ˈveɪləns ʃel/			
 oxide	_____	_____	_____
/ˈɒksaɪd/			

 amphoteric	_____	_____	_____
/ˌæmfəˈterɪk/			
 hydroxide	_____	_____	_____
/haɪˈdrɒksaɪd/			
 hydrolysis	_____	_____	_____
/haɪˈdrɒləsɪs/			
 reactivity	_____	_____	_____
/rɪækˈtɪvɪti/			
 sulfate	_____	_____	_____
/ˈsʌlfeɪt/			

Biology

Topics 5–6 · The mitotic cell cycle, Nucleic acids and protein synthesis

 differentiate	_____	_____	_____
/ˌdɪfəˈrenʃeɪt/			
 tumour	_____	_____	_____
/ˈtjuːmə/			
 prophase	_____	_____	_____
/ˈprəʊfeɪz/			
 spindle	_____	_____	_____
/ˈspɪndl/			

	metaphase <i>/ˌmetəˈfeɪz/</i>			
	equator <i>/ˈkweɪtə/</i>			
	anaphase <i>/ˈænəfeɪz/</i>			
	telophase <i>/ˈteləfeɪz/</i>			
	nucleotide <i>/ˈnjuːklɪtaɪd/</i>			
	base <i>/beɪs/</i>			
	adenine <i>/ˈædəniːn/</i>			
	ribose <i>/ˈriboʊs/</i>			
	purine <i>/ˈpjʊəriːn/</i>			
	guanine <i>/ˈgwaːnaɪn/</i>			
	pyrimidine <i>/ˈpɪrɪmɪdiːn/</i>			
	cytosine <i>/ˈsaɪtəsaɪn/</i>			
	thymine <i>/ˈθaɪmaɪn/</i>			
	uracil <i>/ˈjʊərəsɪl/</i>			
	double helix <i>/ˈdʌbl ˈhiːlɪks/</i>			
	strand <i>/strænd/</i>			
	deoxyribose <i>/diːˈɒksɪrɪboʊs/</i>			

	phosphodiester bond <i>/ˈfɒsfəʊdɪstə bɒnd/</i>			
	complementary base pairing <i>/ˌkɒmplɪˈmentəri beɪs ˈpeərɪŋ/</i>			
Mathematics				
<i>Topics 2–4 · Pure Mathematics 2, Mechanics</i>				
	trapezium rule <i>/trəˈpiːziəm ruːl/</i>			
	root <i>/ruːt/</i>			
	sign change <i>/saɪn tʃeɪndʒ/</i>			
	iteration <i>/ˌɪtəˈreɪʃn/</i>			
	iterative formula <i>/ˈɪtərətɪv ˈfɔːmjələ/</i>			
	integration by substitution <i>/ˌɪntɪˈɡreɪʃn baɪ ˌsʌbstɪˈtjuːʃn/</i>			
	Mechanics <i>/mɪˈkæniks/</i>			
	force <i>/fɔːs/</i>			
	components <i>/kəmˈpəʊnənts/</i>			

Further Mathematics

Topic 3 · Further Mechanics

 horizontal circle			
<i>/ˈhɒrɪˈzɒntl̩ ˈsɜːkl̩/</i>			
 vertical circle			
<i>/ˈvɜːtɪkl̩ ˈsɜːkl̩/</i>			
 Hooke's law			
<i>/hʊks lɔː/</i>			
 modulus of elasticity			
<i>/ˈmɒdʒələs ɒv ɪləˈstɪsɪti/</i>			
 elastic potential energy			
<i>/ɪˈlæstɪk pəˈtɛnʃl̩ ˈenədʒi/</i>			

Computer Science

Topics 7–8 · Ethics and Ownership, Databases

 autonomous vehicles			
<i>/ɔːˈtɒnəməs ˈviːkl̩z/</i>			
 optical character recognition			
<i>/ˈɒptɪkl̩ ˈkærɪktə ˌrekəɡˈnɪʃn/</i>			
 text-to-speech			
<i>/tekst tə spiːtʃ/</i>			
 bias			
<i>/ˈbiːəs/</i>			
 flat files			
<i>/flæt faɪlz/</i>			
 data redundancy			
<i>/ˈdeɪtə rɪˈdʌndənsi/</i>			

 data inconsistency			
<i>/ˈdeɪtə ˌɪnkənˈsɪstənsi/</i>			
 relational database			
<i>/rɪˈleɪʃənl̩ ˈdeɪtəbeɪs/</i>			
 table			
<i>/ˈteɪbl̩/</i>			
 entity			
<i>/ˈentɪti/</i>			
 record			
<i>/ˈrekɔːd/</i>			
 field			
<i>/fiːld/</i>			
 primary key			
<i>/ˈpraɪməri kiː/</i>			
 foreign key			
<i>/ˈfɒrən kiː/</i>			
 composite key			
<i>/ˈkɒmpəzɪt kiː/</i>			
 candidate key			
<i>/ˈkændɪdeɪt kiː/</i>			
 referential integrity			
<i>/ˌrefəˈrenʃl̩ ɪnˈteɡrɪti/</i>			
 entity-relationship diagram			
<i>/ˈentɪti rɪˈleɪʃənʃɪp ˈdaɪəɡræm/</i>			
 cardinality			
<i>/ˌkɑːdɪˈnælɪti/</i>			
 one-to-many			
<i>/wʌn tə ˈmeni/</i>			
 link table			
<i>/lɪŋk ˈteɪbl̩/</i>			
 normalisation			
<i>/ˌnɔːməlaɪˈzeɪʃn/</i>			

 normal forms			
<i>/ˈnɔːml fɔːmz/</i>			
 atomic			
<i>/əˈtɒmɪk/</i>			
 transitive dependency			
<i>/ˈtrænsɪtɪv dɪˈpendənsi/</i>			
 DBMS			
<i>/ˌdiː biː em ˈes/</i>			
 data dictionary			
<i>/ˈdeɪtə ˈdɪkjənəri/</i>			
 concurrent access			
<i>/kənˈkʌrənt ˈækses/</i>			

Economics

Topic 4 · The macroeconomy

 gross national income			
<i>/grəʊs ˈnæʃənl ˈɪŋkʌm/</i>			
 nominal			
<i>/ˈnɒmɪnəl/</i>			
 real			
<i>/rɪəl/</i>			
 per capita			
<i>/pɜː ˈkæpɪtə/</i>			
 standard of living			
<i>/ˈstændəd ɒv ˈlɪvɪŋ/</i>			
 distribution			
<i>/ˌdɪstrɪˈbjʊːʃn/</i>			
 informal economy			
<i>/ɪnˈfɔːml ɪˈkɒnəmi/</i>			

 circular flow of income			
<i>/ˈsɜːkjʊlə fləʊ ɒv ˈɪŋkʌm/</i>			
 household			
<i>/ˈhaʊshəʊld/</i>			
 leakages			
<i>/ˈliːkɪdʒɪz/</i>			
 saving			
<i>/ˈseɪvɪŋ/</i>			
 taxation			
<i>/tækˈseɪʃn/</i>			
 imports			
<i>/ɪmˈpɔːts/</i>			
 injections			
<i>/ɪnˈdʒekʃnz/</i>			
 investment			
<i>/ɪnˈvestmənt/</i>			
 government spending			
<i>/ˈgʌvənmənt ˈspendɪŋ/</i>			