THE MOST CHALLENGING QUESTIONS

# 10 by 10

# AIM FOR TOP SELECTIVE HIGH SCHOOLS

MAXIMISE YOUR CHANCES OF SUCCESS
100 TOUGHEST QUESTIONS DIVIDED INTO 10 TESTS

AGES | 10 - 12

G.A.

- Maximise your General Ability
- Identify and eliminate areas of weakness
- Build exam techniques
- Improve time-management skills
- Boost your confidence

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# Test 01

- Time Limit(Suggested Time) : 6 Minutes

**INSTRUCTIONS**

1. Prior to commencing the test, students should develop a comprehensive knowledge in GENERAL ABILITY.

2. There are 10 multiple choice questions for each exam. The suggested time for each exam is 6(six) minutes. Please be advised that this is a suggested time. The time may vary depending on the ability of the student.

3. There are 4 possible choices for each question, **A**, **B**, **C** or **D**. There is **ONLY 1** correct answer for each question. Please circle the most appropriate answer.

4. Make sure to spend an equal amount of time on each question. Try not to exceed an acceptable amount of time for each question.

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**1** Make one word by choosing a word from each group.

Left group first.

| | | |
|---|---|---|
| co | so | in |

| | | |
|---|---|---|
| sure | net | cite |

It means

**A** group.
**B** shut down.
**C** encourage.
**D** poem.

**2** A is south-west of D which is due east of B. C is south-east of B and due north of F.

How many of these statements are definitely true?

B is north-west of C.
D is north-east of A.
F is south of C.
D is the most easterly point.

**A** 1
**B** 2
**C** 3
**D** 4

**3** Which two statements prove that JACK ENJOYS EATING CAKE?

*1.* Jack eats cake after every meal.
*2.* Those who love baking also enjoy eating what they bake.
*3.* Jack enjoys making cakes and cookies on the weekends.
*4.* Baking is Jack's favourite hobby.

**A** *2 & 3*
**B** *1 & 4*
**C** *1 & 2*
**D** *2 & 4*

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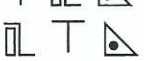
**4** If TO =
AT =
and OH =

What would HOT be?

**A**
**B** 
**C** 
**D**

**5** Choose the word that doesn't belong in this group of words with similar meanings.

**A** lustre
**B** light
**C** radiance
**D** gleam

**6** The third number in a sequence is 25 and the seventeenth number is 109.
What is the eighth number in this sequence?

**A** 47
**B** 51
**C** 55
**D** 59

**7** The word FLEXIBLE means most nearly the same as

**A** VERBAL.
**B** VERISTIC.
**C** VERSATILE.
**D** VERTIGO.

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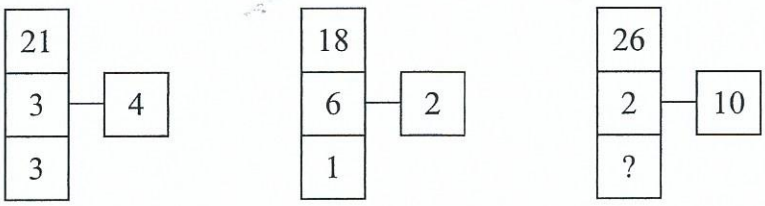
**8** Which of the following statements together prove that HUMANS WALK WITH TWO LEGS?

1. Humans are bipedal primates.
2. Most primates have two legs.
3. Most primates move using four limbs.
4. Humans are unlike other primates.
5. Bipedal refers to using two legs for walking.

**A** 1 and 2
**B** 1 and 5
**C** 1, 2 and 5
**D** 1, 3 and 4

**9** These number groups follow the same rule.




Choose the number that completes the last group.

**A** 1
**B** 3
**C** 5
**D** 7

**10** What is the least number of the following statements required to prove that THE CAFE IS CURRENTLY SERVING COFFEE?

1. The cafe only sells coffee when people are sleepy.
2. The sun has just set below the horizon.
3. All visitors to the cafe have coffee as their favourite drink.
4. The cafe is only busy when they sell coffee.
5. A long queue of people are waiting to place orders at the cafe.
6. People feel sleepy around dusk.

**A** 1
**B** 2
**C** 3
**D** 4

**END OF TEST 01**

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# Test 02

- Time Limit(Suggested Time) : 6 Minutes

**INSTRUCTIONS**

1. Prior to commencing the test, students should develop a comprehensive knowledge in GENERAL ABILITY.

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3. There are 4 possible choices for each question, **A**, **B**, **C** or **D**. There is **ONLY 1** correct answer for each question. Please circle the most appropriate answer.

4. Make sure to spend an equal amount of time on each question. Try not to exceed an acceptable amount of time for each question.

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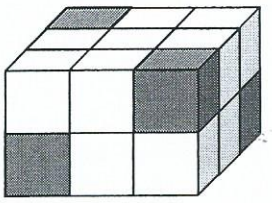
**1** If FH + CL = DU,
AO + EJ = EM and
BY + CI = □K,
then, □ = ?

**A** G
**B** O
**C** R
**D** J

**2** This solid is built using small blocks.



The gray blocks are removed. Choose the most correct statement.

**A** The surface area has decreased.
**B** The surface area has increased.
**C** The surface area has remained the same.
**D** The surface area has decreased by two.

**3** The word EXACERBATE is most **similar** in meaning to

**A** CAUSTIC.
**B** DEFERENTIAL.
**C** EXAGGERATE.
**D** AGGRAVATE.

**4** A kitchen with two chefs cooks 60 meals in 2 hours. How many hours are needed if an extra chef is hired, and there are 180 meals to cook?

**A** 2
**B** 3
**C** 4
**D** 5

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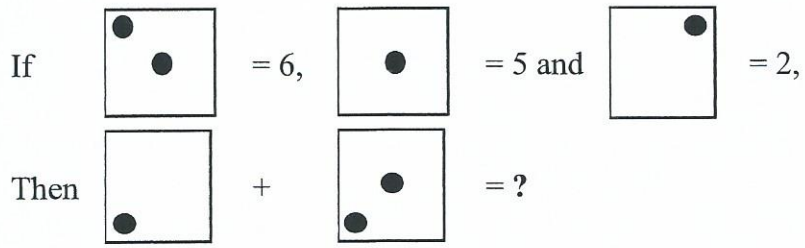
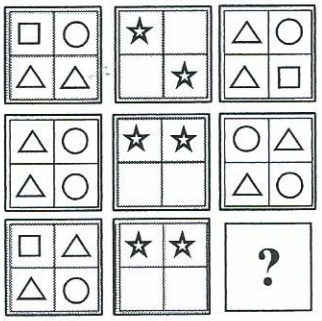
5




**A** 9
**B** 11
**C** 13
**D** 15

6 Choose the missing figure.



**A** **B** **C** **D**

7 Three of the following words share similar meanings.

Which one has a different meaning?

**A** vestige
**B** medal
**C** trace
**D** remnant

**8**

| | | | |
|---|---|---|---|
| △ | □ | □ | 20 |
| ● | □ | □ | 17 |
| ● | ● | △ | 12 |
| ● | ✱ | △ | 17 |
| 15 | 25 | 26 | |

Find the value of ✱.

**A** 5
**B** 6
**C** 8
**D** 9

**9** SAFE is to UNSAFE as PROBABLE is to

**A** UNPROBABLE.
**B** DISPROBABLE.
**C** MISPROBABLE.
**D** IMPROBABLE.

**10** Alpha, Billy, Cameron, David and Emily are standing in a straight line in this particular order. The distance between Alpha & Billy and Cameron & David is half the distance between Billy and Cameron. The distance from Alpha to David is 8 m. The distance between David and Emily is 3 m. Find the distance from Billy to Emily.

**A** 3 m
**B** 5 m
**C** 7 m
**D** 9 m

**END OF TEST 02**

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# Test 03

- Time Limit(Suggested Time) : 6 Minutes

**INSTRUCTIONS**

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2. There are 10 multiple choice questions for each exam. The suggested time for each exam is 6(six) minutes. Please be advised that this is a suggested time. The time may vary depending on the ability of the student.

3. There are 4 possible choices for each question, **A**, **B**, **C** or **D**. There is **ONLY 1** correct answer for each question. Please circle the most appropriate answer.

4. Make sure to spend an equal amount of time on each question. Try not to exceed an acceptable amount of time for each question.

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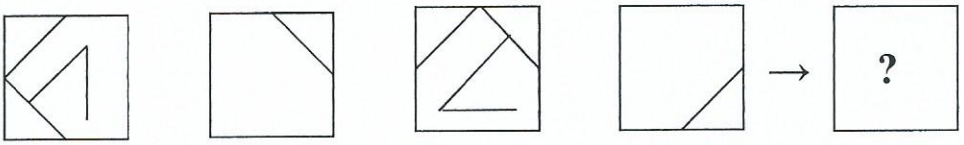
**1** Which word also belongs to this group of words with similar meanings?

praise, commend, admire, ?

**A** commentary
**B** excellent
**C** terrible
**D** compliment

**2** Combine the figures below to construct the missing figure.



**A** **B** **C** **D**

**3** These number groups follow the same rule.

| | |
|---|---|
| 25 | 8 |
| | 7 |

| | |
|---|---|
| 49 | 11 |
| | 14 |

| | |
|---|---|
| ? | 13 |
| | 23 |

Choose the number to complete the last group.

**A** 121
**B** 100
**C** 81
**D** 64

**4** Andrea has her back facing the south-west. She turns 315° to her left, then turns 225° to her right. What direction is she now facing?

**A** north
**B** south-east
**C** south
**D** north-west

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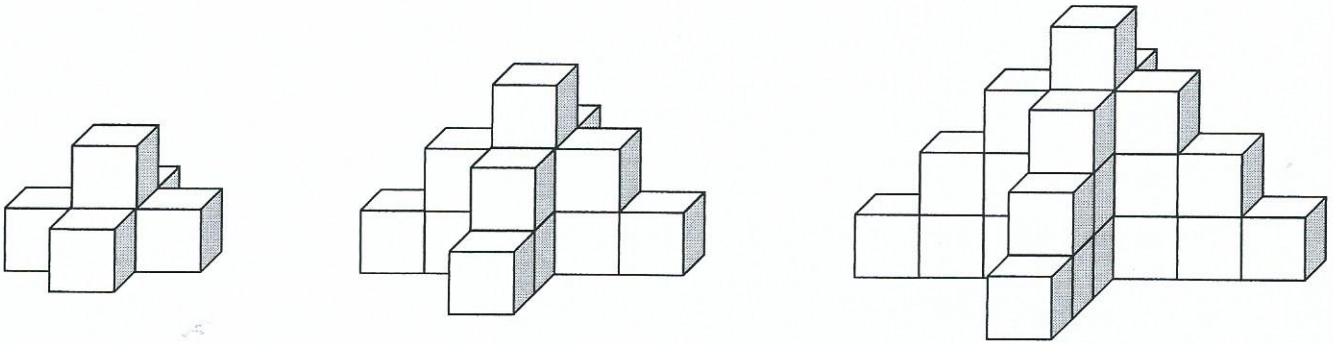
**5** Rearrange the letters in the word BELOW to make a new word meaning

**A** BOX.
**B** UNSTABLE.
**C** BODY PART.
**D** EARTH.

**For Question 6, use the following 3D figures**



Step 1 Step 2 Step 3

**6** How many more cubes will I require to make Step 8 if I have 66 cubes already?

**A** 87
**B** 90
**C** 69
**D** 74

**7** If A = 1 and Z = 26, a group is incorrect in this series.

B5D, D10G, G17K, K26Q

What should the correct group be?

**A** K27Q
**B** K27P
**C** K26O
**D** K26P

**8** Rearrange the letters in YREGES to make a word meaning

**A** SPRING.
**B** EAGER.
**C** MATERIALISTIC.
**D** FATTENING.

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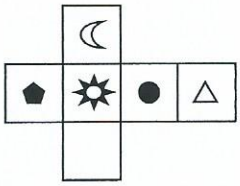
**9** This is the net of a cube.



Which of the following cannot be a view of the assembled net?

**A**

**B**

**C**

**D**

**10** Three of the following words share a similar meaning.

Which word has a **different** meaning?

**A** sadness
**B** unfortunate
**C** dejection
**D** sorrow

**END OF TEST 03**

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# Test 04

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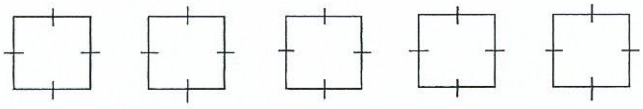
**1** Join these single shapes together to create a single composite shape.



What is the maximum number of axes of symmetry the composite shape can have?

**A** 1
**B** 2
**C** 4
**D** 6

**2** Which word is the odd one out?

segregate, insulate, congregate, sequester, quarantine

**A** insulate
**B** congregate
**C** sequester
**D** quarantine

**3** A big bus took 4.5 seconds to pass me as I stood by the bus stop. If it was travelling at 18 km/h, how long is the bus?

**A** 5.5 m
**B** 20 m
**C** 22.5 m
**D** 37.5 m

**4** Which word does not belong in this group of similar meaning words?

**A** parody
**B** factual
**C** distortion
**D** travesty

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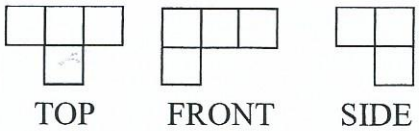
**5** Which number best replaces the question mark?

| | | | |
|---|---|---|---|
| A | Z | B | Y |
| V | F | ? | C |
| E | W | D | X |

**A** P
**B** U
**C** O
**D** L

**6** What is the minimum number of cubes needed to form a shape with these properties?




**A** 4
**B** 5
**C** 6
**D** 7

**7** Stephen's age is equal to double his age in four years' time, minus double his age four years ago.

How old is Stephen?

**A** 12
**B** 14
**C** 16
**D** 18

**8** Which word has the most **opposite** meaning to CONSTRUE?

**A** REFRAIN
**B** DETERMINE
**C** OBSCURE
**D** CONCUR

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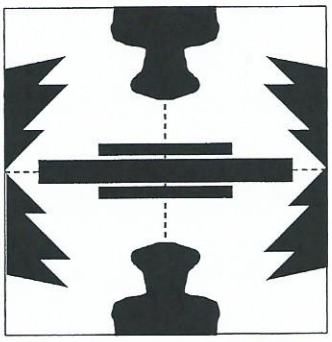
**9** A piece of paper is folded in half twice, cut in a certain way and then unfolded.



Which of the following shows the cuts made when the paper was folded?

**A**

**B**

**C**

**D**

**10** Three of these words share similar meanings.

Which one has a different meaning?

**A** venerated
**B** mediocre
**C** praiseworthy
**D** adulated

**END OF TEST 04**

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# Test 05

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**1** I have a cube with side length of 6 cm. I remove a portion of the cube so that I have a cube with side length 3 cm, a rectangular prism of dimensions 6 x 2 x 4 cm, one of dimensions 4 x 4 x 1 cm and one rectangular prism of 2 x 2 x 6 cm. How many cubes of side length 2cm can fit within the remaining solid?

**A** 19
**B** 13
**C** 12
**D** 15

**2** FRAILTY is to BRAWN as BARREN is to

**A** SHIP.
**B** ARABLE.
**C** LEASE.
**D** ARID.

**3** Which number belongs in this group of numbers?

18 54 78 102 210

**A** 13
**B** 94
**C** 96
**D** 46

**4** These number groups follow the same rule.

| | | |
|---|---|---|
| 4 | 9 | 26 |

| | | |
|---|---|---|
| 9 | 14 | 69 |

| | | |
|---|---|---|
| ? | 19 | 140 |

Choose the number to complete the last group.

**A** 25
**B** 16
**C** 4
**D** 36

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**5** Choose a word from each group to make a word.

| | | |
|---|---|---|
| over | in | under |

| | | |
|---|---|---|
| state | take | line |

It means

**A** think.
**B** allow.
**C** design.
**D** tackle.

**6** Find the missing number in the sequence.

9, 18, 45, 126, ?, 1098

**A** 306
**B** 315
**C** 369
**D** 342

**7** Sara and Daniel have some oranges. Sara sold 60% more than she ate and Daniel sold 20% more than he ate. If she sold 80 oranges and he sold 72, what was the different in the amount of oranges that they ate?

**A** 10
**B** 25
**C** 20
**D** 70

**8** PROHIBIT is to ALLOW as _____ is to SUBDUED.

**A** LIVELY
**B** UNDERSTOOD
**C** REPRESSED
**D** SPECIAL

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**9** What is the missing letter?

| | | |
|---|---|---|
| A | 16 | I |
| J | 2 | K |
| E | 22 | P |
| S | 8 | ? |

**A** T
**B** W
**C** G
**D** N

**10** Rearrange the order of the letters in RIDE to make a new word meaning

**A** TABULATE.
**B** ATTACK.
**C** DREADFUL.
**D** STOP.

**END OF TEST 05**

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# Test 06

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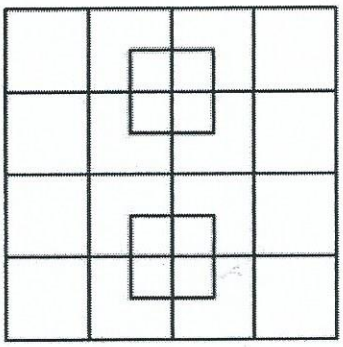
**1** Which word does NOT belong to this group of words with similar meanings?

**A** PRIMEVAL
**B** ANCIENT
**C** PREHISTORIC
**D** PRIMATE

**2** How many squares are in the figure below?



**A** 38
**B** 46
**C** 40
**D** 36

**3** A party shop sold some red, yellow and orange balloons. They sell a combined total of 80 red and yellow balloons, 90 yellow and orange balloons and 100 orange and red balloons. How many red, orange and yellow balloons were sold?

**A** 270
**B** 240
**C** 135
**D** 120

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**4** The following letters and number sets share the same relationship.

| | |
|---|---|
| C | 10 |
| B | 11 |
| S | 6 |
| Z | 13 |

Which number best pairs with the letter J?

**A** 1
**B** 2
**C** 3
**D** 4

**5** The word PORTABLE is most **similar** in meaning to

**A** FIXED.
**B** SHIPYARD.
**C** SEAWORTHY.
**D** MOBILE.

**6** Prime numbers are numbers greater than one that do not have any positive factors other than one and itself, for example, 11 and 23.

How many prime numbers are there between 1 and 100?

**A** 24
**B** 25
**C** 26
**D** 27

**7** Re-arrange the letters in SIREN, and choose the statement that uses the new word correctly.

**A** When the fire started, I heard a SIREN.
**B** The grandparents are fond of their SIREN.
**C** He went to the SIREN to pray.
**D** You should SIREN your hands before you eat.

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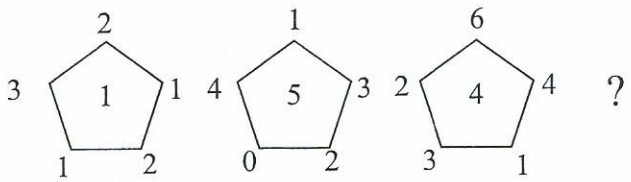
**8** These number groups are arranged in a certain pattern.




What is the next number group in this sequence?

**A** **B** **C** **D**

**9** In a foreign language,

BAMUT THIO DOPPU means SLOWER IS BORING, and
DOPPU NAN DOPPU means SLOWER AND SLOWER.

How would you write AND BORING in that language?

**A** NAN BAMUT
**B** DOPPU BAMUT
**C** BAMUT NAN
**D** NAN THIO

**10** Choose a word from each group to make a new word.

| | | |
|---|---|---|
| out | in | per |

| | | |
|---|---|---|
| use | law | line |

It means

**A** examine.
**B** legal
**C** celebrate.
**D** drop.

**END OF TEST 06**

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# Test 07

- Time Limit(Suggested Time) : 6 Minutes

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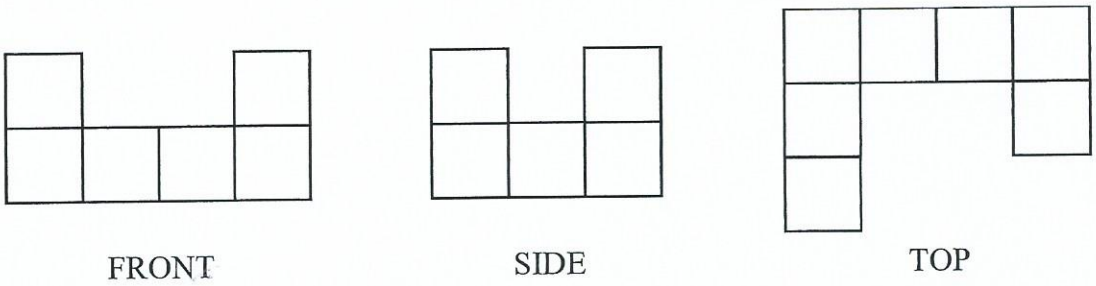
**1** MANY is to POLYGAMY as ONE is to

**A** UNIGAMY.
**B** MONOGAMY.
**C** ANTIGAMY.
**D** SOLOGAMY.

**2** What is the least number of cubes needed to form a shape with these views?



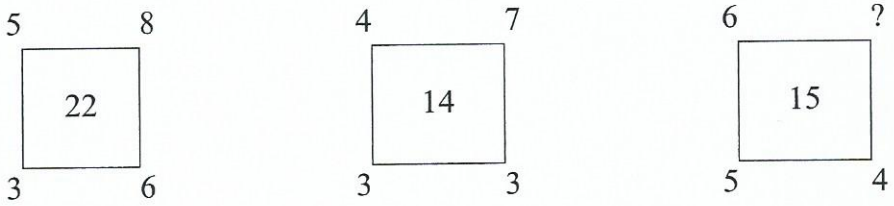

**A** 9
**B** 10
**C** 11
**D** 12

**3** Three of the following words have similar meanings.

Which word has a **different** meaning from the other three?

**A** condemn
**B** recluse
**C** censure
**D** castigate

**4** Which is the missing number?




**A** 3
**B** 5
**C** 7
**D** 9

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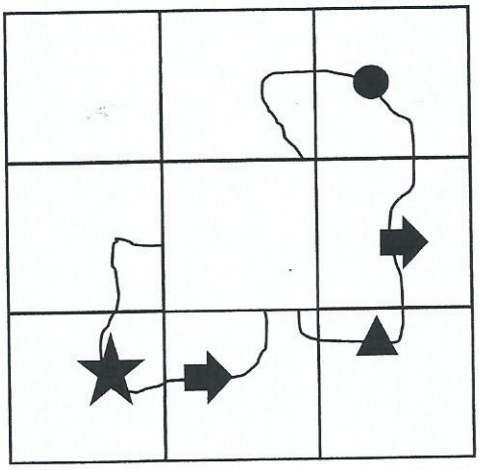
**5** Organise the following words into the best sentence.

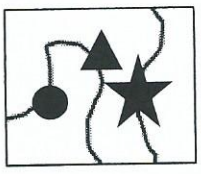
rain is be of the all wasted will no if there crops

The last word would be

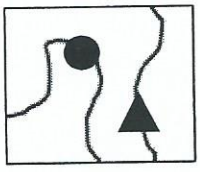
**A** there.
**B** rain.
**C** crops.
**D** will.

**6** Which is the missing tile?

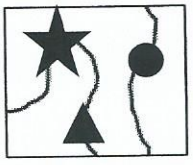




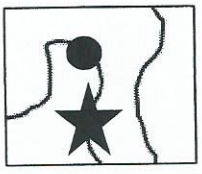
**A**



**B**



**C**



**D**

**7** The word most **similar** in meaning to REVERBERATION is

**A** REPERCUSSION.
**B** FINALE.
**C** ABERRATION.
**D** BANE.

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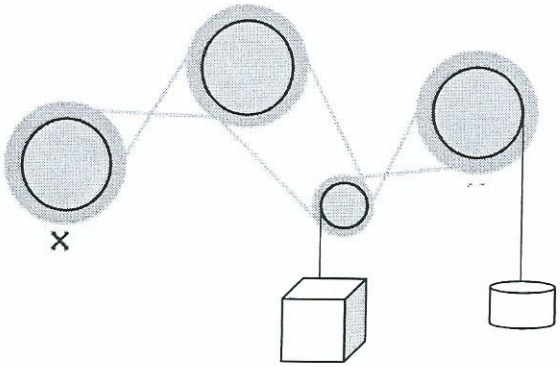
**8** The circles in the diagram below represent gears. If gear X was turned clockwise, what will happen to the cylinder and cube?




| | | |
|---|---|---|
| **A** | up | up |
| **B** | up | down |
| **C** | down | up |
| **D** | down | down |

**9** In a certain code,

HERE I AM becomes ARAH E MU

In this code the message
SHIPS SAIL WEST would become

**A** SPIHS LIAS TSEW
**B** SPIHS LIIS TSIW
**C** SPEHS SAIL WEST
**D** SPEHS LEUS TSAW

**10** Which one of the following words does not rhyme with the other three?

**A** cymbal
**B** abysmal
**C** corral
**D** symbol

**END OF TEST 07**

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# Test 08

- Time Limit(Suggested Time) : 6 Minutes

**INSTRUCTIONS**

1. Prior to commencing the test, students should develop a comprehensive knowledge in GENERAL ABILITY.

2. There are 10 multiple choice questions for each exam. The suggested time for each exam is 6(six) minutes. Please be advised that this is a suggested time. The time may vary depending on the ability of the student.

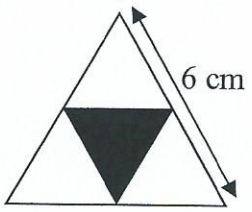
3. There are 4 possible choices for each question, **A**, **B**, **C** or **D**. There is **ONLY 1** correct answer for each question. Please circle the most appropriate answer.

4. Make sure to spend an equal amount of time on each question. Try not to exceed an acceptable amount of time for each question.

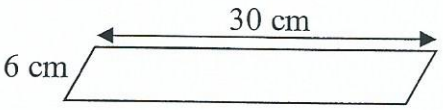
5. Please avoid reading the solutions until each exam is complete. The exam is testing your abilities under exam conditions, not an exercise you complete as homework. ONLY view the solutions after a reasonable attempt has been made.

**Question 1 refers to the following information**

A tile is made up of equilateral triangles.




The tile is tessellated to fill this parallelogram.




**1** If each tile is 4 $cm^2$ in area, what area is covered by the white triangles?

**A** 30 $cm^2$
**B** 15 $cm^2$
**C** 45 $cm^2$
**D** 60 $cm^2$

**2** Re-arrange the letters in TEASED and choose the sentence that uses the new word correctly.

**A** All the adults had a meeting to discuss their TEASED.
**B** The child held his TEASED carefully as he stepped off the bus.
**C** The horse was TEASED, which made cleaning it easier.
**D** People like to go to the park and TEASED.

**3** Which letter best replaces the question mark?

| | | |
|---|---|---|
| L | H | D |
| B | C | D |
| X | X | ? |

**A** D
**B** M
**C** P
**D** Y

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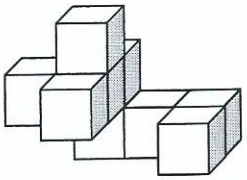
**4** What is the fewest number of small cubes that need to be added to make the figure below a cube?



**A** 55
**B** 27
**C** 26
**D** 54

**5** All but one of the following are fruits/vegetables but the letters in the words have been jumbled.

Which word is not the name of a fruit or vegetable when the letters are unjumbled?

**A** franspitious
**B** kele
**C** serpcys
**D** odovaca

**6** Together Martin, Priom and Steven weigh 225 kg. Steven weighs 7 kg more than Martin and twice that amount more than Priom.

How much does Steven weigh?

**A** 68 kg
**B** 72 kg
**C** 75 kg
**D** 82 kg

**7** Choose the best word to complete this sentence.

He _____ his darkest secrets to his best friend.

**A** confided
**B** confirmed
**C** consented
**D** contended

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**8** Which letters are missing in this series?

BC, GH, ____, NO

**A** VW
**B** QR
**C** KL
**D** XY

**9** In a group of 120 kids, they play basketball, tennis and volleyball. 72 kids play basketball, which is 3 times the amount that play tennis. 17 kids play both tennis and basketball while 6 kids play both tennis and volleyball. No kid plays no sport and 5 kids play all three.

How many kids play volleyball only?

**A** 41
**B** 37
**C** 13
**D** 22

**10** FELINE is to CAT as BOVINE is to

**A** HORSE.
**B** COW.
**C** BIRD.
**D** SHEEP.

**END OF TEST 08**

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# Test 09

- Time Limit(Suggested Time) : 6 Minutes

**INSTRUCTIONS**

1. Prior to commencing the test, students should develop a comprehensive knowledge in GENERAL ABILITY.

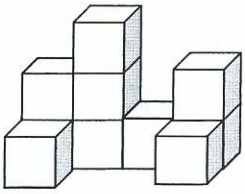
2. There are 10 multiple choice questions for each exam. The suggested time for each exam is 6(six) minutes. Please be advised that this is a suggested time. The time may vary depending on the ability of the student.

3. There are 4 possible choices for each question, **A**, **B**, **C** or **D**. There is **ONLY 1** correct answer for each question. Please circle the most appropriate answer.

4. Make sure to spend an equal amount of time on each question. Try not to exceed an acceptable amount of time for each question.

5. Please avoid reading the solutions until each exam is complete. The exam is testing your abilities under exam conditions, not an exercise you complete as homework. ONLY view the solutions after a reasonable attempt has been made.

**1** What is the least number of smaller cubes that need to be added to the shape below to make it into a cube?



**A** 50
**B** 54
**C** 28
**D** 42

**2** 3 builders can build 5 houses in 5 hours. Another 4 builders can build 6 houses in 2 hours. Another 4 builders can build 8 houses in 4 hours.

If one builder was taken from each group and the 3 builders were to work for 12 hours, how many houses would they be able to build in that timeframe?

**A** 10 houses
**B** 12 houses
**C** 19 houses
**D** 6 houses

**3** The word WANTON is most **similar** in meaning to

**A** MALICIOUS.
**B** DUMPLING.
**C** RIGHTEOUS.
**D** CUISINE.

**4** Daniel knew that his strong tennis rival, Jacob, had an Achilles' heel: his backhand.

When Daniel is talking about Jacob, he means

**A** Jacob hasn't played tennis in a while.
**B** Jacob's backhand was too skilled.
**C** Tennis is an unfair sport.
**D** Jacob's backhand is his weakness.

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**5** Three of these shapes are views of the same solid from a different angle.
Which one is not?

**A** **B** **C** **D**

**6** Homographs are words which have different meanings when pronounced differently. How many of the words below are homographs?

| | |
|---|---|
| bow | word |
| object | label |
| show | axes |

**A** 1
**B** 4
**C** 3
**D** 2

**7** These number groups follow the same rule.

| | |
|---|---|
| 78 | 165 |

| | |
|---|---|
| 173 | ? |

| | |
|---|---|
| 132 | 363 |

Find the missing number.

**A** 431
**B** 593
**C** 126
**D** 544

**8** Change a letter in the word PLUM and then rearrange the letters to make a word meaning LEAP.

The new letter is

**A** J.
**B** U.
**C** T.
**D** A.

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**9** $A + B + C + D = 33$
$D + B + C + E = 26$
$F + D + B + C = 22$

If F + E + A add to 18, then what is the value of B + C + D?

**A** 18
**B** 21
**C** 25
**D** 27

**10** A, B, C, D, E, F, G are placed in a line in a certain order. D and E are at the ends of the line. A is 5 spaces from D. F is not next to G. There are as many letters between F and A as there are between B and G.

Who is in the middle of the line?

**A** G
**B** E
**C** C
**D** F

**END OF TEST 09**

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# Test 10

- Time Limit(Suggested Time) : 6 Minutes

**INSTRUCTIONS**

1. Prior to commencing the test, students should develop a comprehensive knowledge in GENERAL ABILITY.

2. There are 10 multiple choice questions for each exam. The suggested time for each exam is 6(six) minutes. Please be advised that this is a suggested time. The time may vary depending on the ability of the student.

3. There are 4 possible choices for each question, **A**, **B**, **C** or **D**. There is **ONLY 1** correct answer for each question. Please circle the most appropriate answer.

4. Make sure to spend an equal amount of time on each question. Try not to exceed an acceptable amount of time for each question.

5. Please avoid reading the solutions until each exam is complete. The exam is testing your abilities under exam conditions, not an exercise you complete as homework. ONLY view the solutions after a reasonable attempt has been made.

**1** Organise these words into the best sentence.

| | | | | |
|---|---|---|---|---|
| onto | with | riding | highway | experienced |
| dangerously | him | took | that | the |
| a | resulted | detour | cyclist | the |

The second last word of the sentence is

**A** riding
**B** detour
**C** resulted
**D** the

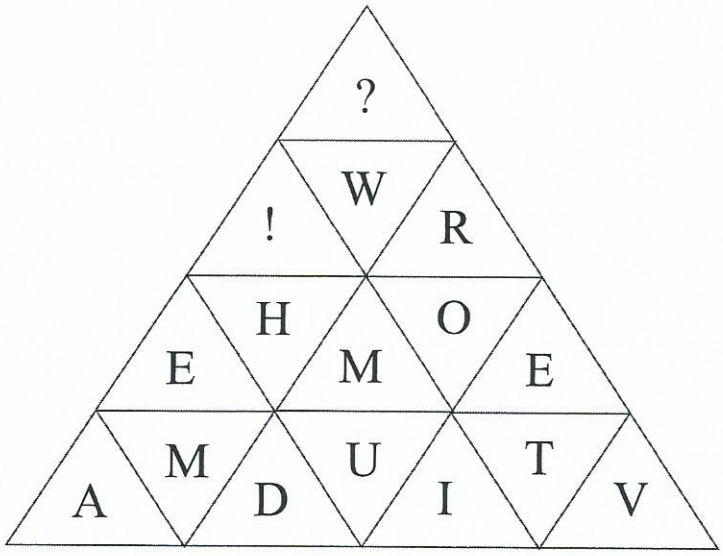
**2**

| | | | |
|---|---|---|---|
| A | Y | K | N |

Which letter could also belong to the group?

| | | | |
|---|---|---|---|
| M | S | G | F |
| **A** | **B** | **C** | **D** |

**3** What is the letter that best replaces the question mark?




**A** M
**B** T
**C** P
**D** J

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**4** These number groups follow the same rule.

| | | |
|---|---|---|
| 2 | 3 | 6 |

| | | |
|---|---|---|
| 1 | 3 | 12 |

| | | |
|---|---|---|
| 3 | ? | 4 |

Which option best replaces the question mark?

**A** 8
**B** 6
**C** 2
**D** 3

**5** Choose the prefix that goes with VIEW to make a word most similar in meaning to INTERROGATION.

**A** CON
**B** PRE
**C** INTER
**D** OVER

**6** There are a hundred cars in a carpark. A quarter were Toyotas and two-thirds of the remaining cars were Holdens. All the other cars were Fords. Three-fifths of the cars are black. If half of all Holdens are black, and all Fords are black, what percentage of Toyotas are black?

**A** 30%
**B** 40%
**C** 50%
**D** 60%

**7** The word CREAM, after replacing one of its letters with the letter Y, is rearranged to make a word that means

**A** SHELLFISH.
**B** SPINNER.
**C** PENETRATE.
**D** COMPASSION.

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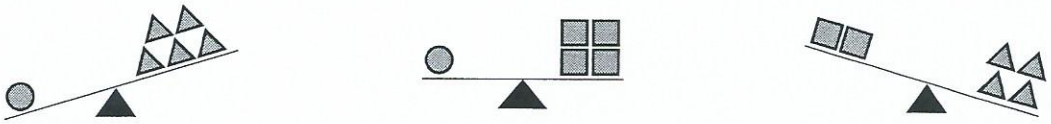
**8** Which number replaces the question mark in this table?

| | | | |
|---|---|---|---|
| 4 | 2 | 6 | 10 |
| 11 | 17 | 23 | 7 |
| 9 | 29 | 35 | ? |
| 3 | 17 | 8 | 13 |

**A** 14
**B** 9
**C** 22
**D** 18

**9** Consider the following scales.



Which of the following would complete the scale below?

**A**
**B**
**C**
**D**

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**10** When Wilson is walking to school in the morning, his shadow is on either his left or right. After school, in the afternoon on his way home, he turns 90 degrees to his right and a shadow appears in front of him. If the path between his house and school is singular and straight, which statement is true?

**A** Wilson's house is located South of his school and the shadow appeared on his left in the morning.

**B** Wilson is walking towards North in the morning and the shadow appeared on his right in the morning.

**C** Wilson's school is South of his house and the shadow appeared on his right in the morning.

**D** Wilson is walking towards North in the morning and the shadow appeared on his right in the morning.

**END OF TEST 10**

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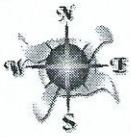
# TOP SELECTIVE HIGH SCHOOLS

# GENERAL ABILITY
# ANSWERS & EXPLANATIONS

# Test 01

| Question Number | Answer | Solution |
|---|---|---|
| 1 | C | incite = encourage violent/unlawful behavior<br>sonnet (a form of poem), society (group of people), closure (shut down)<br>insure is a real word, but there are no synonyms in the multiple choice, so incite is the only 'correct' answer. |
| 2 | C |  <br>B D<br>A C<br>F |
| 3 | A | 2 and 3<br><br>3 – Jack enjoys making cakes → Jack bakes cakes<br>2 – Since Jack enjoys baking cakes, he must enjoy eating cakes.<br><br>Not 2 and 4 as there is no mention of what Jack bakes. He could be baking bread only. |
| 4 | B | <br>T = O, L = T, ◺ = H, D = A<br>Reverse order placement. |
| 5 | B | lustre = radiance = gleam<br><br>∴ odd one out is light |
| 6 | C | 109 – 25 = 84<br>17th – 3rd = 14 steps<br>84 ÷ 14 = 6<br>25 + 5 × 6 = 55 |
| 7 | C | VERSATILE - able to adapt or be adapted to many different functions or activities.<br>FLEXIBLE - able to be easily modified to respond to altered circumstances. |
| 8 | B | Statement 1 defines humans as being bipedal. Statement 5 defines bipedal as walking with two legs |
| 9 | B | 3<br><br>Top left number divided by middle left number then minus bottom left number equals right number |
| 10 | B | Statements 4 and 5 are sufficient to prove that the cafe is busy and hence selling coffee. Although statements 1, 2 and 6 also prove that the cafe is currently selling coffee, the question asks for the least number of statements necessary. |

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# Test 02

| Question Number | Answer | Solution |
|---|---|---|
| 1 | A | A = 1, B = 2, C = 3….Z = 26<br>FH + CL = DU<br>(6 × 8) + (3 ×12) = (4 × 21)<br>AO + EJ = EM<br>(1 × 15) + (5 × 10) = (5 × 13)<br>Therefore<br>BY + CI = K<br>(2 × 25) + (3 × 9) = (7 × 11)<br>□= G |
| 2 | C | The marked blocks all have 3 faces. When removed, each of the exposed faces also have 3 faces each, so there is no change in surface area. |
| 3 | D | EXACERBATE – make a bad situation worse - AGGRAVATE |
| 4 | C | If 2 chefs cook 60 meals in 2 hours, 2 chefs cook 30 meals in an hour.<br>1 chef must cook 15 meals in an hour, thus 3 chefs cook 45 meals in an hour.<br>180 ÷ 45 = 4.<br>Thus it takes 3 chefs, 4 hours to cook 180 meals. |
| 5 | C | Starting from the top left, going clockwise, the dots equal 1, 2, 3 and 4. The centre dot equals 5.<br>4 + 9 = 13 |
| 6 | C | The two stars in the second column indicate which spots in the first column to switch around in order to create the third column. |
| 7 | B | Vestige – a trace or remnant of something that is disappearing or no longer exists. |
| 8 | C | □ + □ + △ + △ = 26<br>□ + □ + △ = 20<br>∴ △ = 6<br>∴ □ = 7<br>△+ ● + ● + ● = 15<br>∴ ● = (15 - 6) ÷ 3 = 3<br>△ + ✱ + ● = 17<br>∴ ✱ = 17 - 6 - 3 = 8 |

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| | | |
|---|---|---|
| 9 | D | UNSAFE is the opposite of SAFE; IMPROBABLE is the opposite of PROBABLE. |
| 10 | D | Alpha – 2 metres – Billy – 4 metres – Cameron – 2 metres – David – 3 metres – Emily |

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# Test 03

| Question Number | Answer | Solution |
|---|---|---|
| 1 | D | Compliment – a polite expression of praise or admiration |
| 2 | D | Combine all four diagrams. Lines that have the same orientation are removed. Therefore the answer is D. |
| 3 | D | Rule: $\sqrt{\text{number on top left}} + \sqrt{\text{bottom number} + 2}$ = number on the top right<br>Therefore $\sqrt{64} + \sqrt{23 + 2} = 13$ |
| 4 | D | Northwest<br>Facing north-east. 315° to left is east. 225° to right is northwest. |
| 5 | C | BOWEL or ELBOW = BODY PART |
| 6 | A | Step 7 has 120 cubes, Step 8 will have 153 cubes.<br>Therefore, (153 – 66) = 87 cubes are required |
| 7 | D | K26P<br>root of (number-1) + 1st letter = 2nd letter. I.e. in B5D, B + root (5-1) = D.<br>Therefore K + root (26-1) = K + 5 = P |
| 8 | A | GEYSER – a hot spring in which water intermittently boils, sending a tall column of water and steam into the air.<br>DO NOT CONFUSE WITH GREEDY.<br>ALSO FATTENING IS SPELT GREASY NOT GREESY. |
| 9 | B | The pentagon should point left |
| 10 | B | Unfortunate sadness = dejection = sorrow – feeling sad<br>Unfortunate – unlucky |

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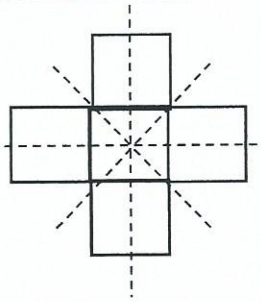
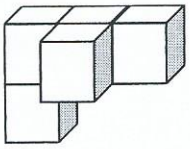
# Test 04

| Question Number | Answer | Solution |
|---|---|---|
| 1 | C |  |
| 2 | B | segregate, insulate, sequester and quaratine are all synonyms meaning to divide. Congregate means to gather into a crowd or mass. |
| 3 | C | 18 km/h<br>18,000 m/h<br>18,000 ÷ 60 = 300 m/min<br>300 ÷ 60 = 5 m/sec<br>4.5 seconds: 4.5 × 5 m = 22.5 m |
| 4 | B | Factual<br>parody = distortion = travesty = a distorted or inaccurate representation of something |
| 5 | B | The letters snake from the outside of the grid to the inside in a clockwise fashion, with the letter alternating from the beginning and the end of the alphabet. |
| 6 | B | The minimum number of cubes required is five.<br>2 1 1<br>1<br>  |
| 7 | C | 16<br>Let his current age be x<br>2(x + 4) – 2(x – 4) = (2x + 8) – (2x – 8) = 16 |
| 8 | C | CONSTRUE means to interpret in a particular way or make clear, the word most opposite OBSCURE. |
| 9 | C | <br>This option corresponds to the top-right square. |
| 10 | B | Venerated = regarded with great respect<br>Mediocre = of only average quality<br>Praiseworthy = deserving approval and admiration<br>Adulated = praised excessively |

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# Test 05

| Question Number | Answer | Solution |
|---|---|---|
| 1 | C | This question cannot be solved through basic mathematics, but must be solved graphically.<br>A 6 x 2 x 4 cm shape combined with a 2 x 2 x 6 cm shape gives a 6 x 6 x 2 cm shape. That is, after they are most efficiently removed from the original cube, you have a prism with dimensions 6 x 6 x 4 cm. Then you have a 3 x 3 x 3 cm cube taken and then the 4 x 4 x 1 cm cube taken away. No matter how you rearrange a 3 x 3 x 3 cm cube and a 4 x 4 x 1 cm prism inside a 6 x 6 x 4 shape, you can only construct another 10 of 2 x 2 x 2 cm cubes inside, leaving 21 'waste' cubes.<br>The mathematical way of subtracting volumes then dividing ( 6 x 6 x 6 = 216; 216 – 27 – 48 – 16 – 24 = 101; 115/8 = 12.625) gives you the wrong answer as it does not account for 'waste' cubes. |
| 2 | B | ARABLE → antonyms<br>frailty = worked with great care and detail<br>brawn = physical strength<br>barren = too poor to produce vegetation<br>arid = having little rain (synonym of barren) |
| 3 | C | All numbers in the group have to be multiples of 6. |
| 4 | B | $4 + 9 = 13.$ $13 \times \sqrt{4} = 26$<br>so $140 \div \sqrt{x} = 19 + x.$ guess and check for 16 |
| 5 | D | undertake = tackle |
| 6 | C | The rule is: (× 3 - 9) |
| 7 | A | Let $x$ = the number of oranges that Sara ate. Thus $x + .6x = 1.6x$ is the number of oranges that Sara sold. Thus $\frac{80}{x} = \frac{1.6}{1}$. $x = 50$. Let y = the number of oranges that Daniel ate. Thus x + .2x = 1.2x is the number of oranges that Daniel sold. Thus y = 60. Therefore the difference that they ate is 10 oranges. |
| 8 | A | Lively is the opposite of subdued. |
| 9 | B | The numbers of letters apart in the alphabet between the letter in the first column and the third column doubled gives the second column. |
| 10 | C | DREADFUL<br>DIRE – extremely serious or urgent |

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# Test 06

| Question Number | Answer | Solution |
|---|---|---|
| 1 | D | PRIMEVAL, ANCIENT, PREHISTORIC = Very old, belonging to the very distant past.<br>PRIMATE – A family of mammals including humans and apes. |
| 2 | C | There are 8 very small squares, 18 1x1 squares, 9 2x2 squares, 4 3x3 squares and 1 4x4 square making 40 squares total. |
| 3 | C | R + Y = 80 (1)<br>Y + O = 90 (2)<br>O + R = 100 (3)<br><br>(1) + (2) + (3):<br>2R + 2Y + 2O = 270<br>R + Y + O = 135 balloons |
| 4 | C | Number signifies how many letters the first letter of each word is away from the letter 'm'. |
| 5 | D | MOBILE<br>PORTABLE = able to be easily carried or moved<br>MOBILE = able to move or be moved freely or easily |
| 6 | B | Remember that 2 is a prime number<br>2, 3, 5, 7, 11, 13, 17, 19, 23, 29, 31, 37, 41, 43, 47, 53, 59, 61, 67, 71, 73, 79, 83, 89, 97 |
| 7 | D | RINSE – wash something with clean water to remove impurities. |
| 8 | D | 1st hexagon adds to 10, 2nd adds to 15, 3rd adds to 20, which means the 4th should add to 25. |
| 9 | C | DOPPU is repeated twice as is SLOWER, therefore DOPPU = SLOWER. It also shows the words are in reverse order. BORING = BAMUT – so the phrase is BAMUT NAN. |
| 10 | A | peruse = examine |

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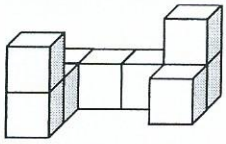
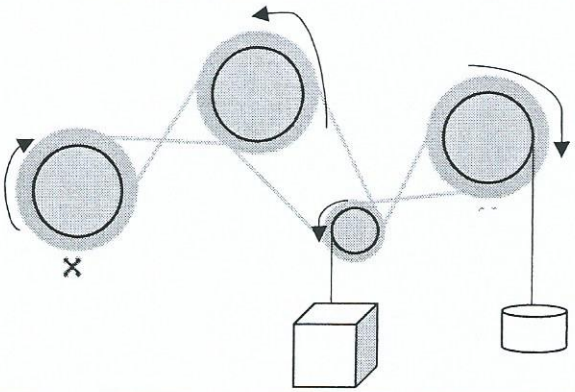
# Test 07

| Question Number | Answer | Solution |
|---|---|---|
| 1 | B | MONOGAMY.<br>POLYGAMY is having many husbands/wives,<br>whereas MONOGAMY is having one husband/wife. |
| 2 | A |  |
| 3 | B | condemn = censure = castigate = express disapproval of<br>recluse = a person who lives a solitary life |
| 4 | D | Combine the digits on the top and on the bottom and find the difference between the 2 numbers e.g. 5, 8, 3, 6 → 58 and 36 → difference is 22.<br>By doing so, you can find that 54 + 15 = 69, ∴ The answer is 9 (D) |
| 5 | B | Rain<br>All of the crops will be wasted if there is no rain. |
| 6 | A | The lines join the combination of shapes – whatever shape is absent must appear in the unknown square |
| 7 | A | REPERCUSSION<br>REVERBERATION and REPERCUSSION both mean consequence of an event or action |
| 8 | D |  |
| 9 | D | A E I O U<br>SHIPS SAIL WEST<br>SPIS LIAS TSEW<br>Pattern is reversing the order of each word, then for each vowel, it becomes the previous vowel in sequences.<br>SHIPS SAIL WEST → SPEHS LEUS TSAW |
| 10 | C | Cymbal, abysmal and symbol all end in the 'uhl' sound while corral ends in the 'owl' sound. |

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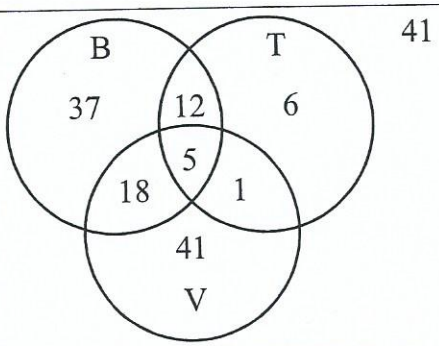
# Test 08

| Question Number | Answer | Solution |
|---|---|---|
| 1 | A | The white triangles take up three quarters of $4cm^2 = 3cm^2$.<br>There are 10 tiles × $3cm^2 = 30cm^2$ |
| 2 | C | SEDATE = calm, undignified and relaxed. |
| 3 | C | L (12) \| H (8) \| D (4)<br>B (2) \| C (3) \| D (4)<br>X (24) \| X (24) \| ?<br><br>Column 1 × Column 2 = Column 3<br>4 × 4 = ?<br>4 × ? = 16<br>The letter in the 16th position in the alphabet is P. |
| 4 | A | Looking at the image the smallest cube to make is:<br>4 × 4 × 4 = 64 smaller cubes<br>There are only 9 cubes present.<br>64 – 9 = 55 cubes are needed. |
| 5 | C | A Passionfruit<br>B Leek<br>C Cypress<br>D Avocado |
| 6 | D | 82 kg<br>M + P + S = 225 kg (1)<br>S – 7 = M (2)<br>S – 14 = P (3)<br>Substitute (2) and (3) into equation (1):<br>S - 7 + S - 14 + S = 225<br>3S = 246<br>S = 82 kg |
| 7 | A | CONFIDED<br>confide = tell someone about a secret or private matter while trusting them not to repeat it to others.<br>He confided his darkest secrets to his best friend. |
| 8 | C | BC DEF GH IJ KL M NO |
| 9 | A |  |
| 10 | B | COW |

# Test 09

| Question Number | Answer | Solution |
|---|---|---|
| 1 | B | The smallest cube we can make is 4 x 4 x 4 since in the current shape the longest side is 4 blocks. There are clearly 10 blocks in the shape now. 64 – 10 = 54 blocks. |
| 2 | C | 3 builders make 5 houses in 5 hours = 1 builder makes 5 houses in 15 hours<br>= 1 builder makes 1 house in 3 hours<br>4 builders make 6 houses in 2 hours = 1 builder makes 6 houses in 8 hours<br>= 1 builder makes 1 house in 1.333 hrs<br>4 builders make 8 houses in 4 hours = 1 builder makes 8 houses in 16 hours<br>= 1 builder makes 1 house in 2 hours<br><br>Therefore, 1st builder builds 4 houses in 12 hours<br>2nd builder builds 9 houses in 12 hours<br>3rd builder builds 6 houses in 12 hours<br><br>Therefore, work together to build 19 houses in 12 hours. |
| 3 | A | wanton = (of a cruel or violent action) deliberate and unprovoked |
| 4 | D | An Achilles' heel is a metaphor for a fatal weakness in spite of overall strength. |
| 5 | A | If two of B, C and D must be true, then we know the shape must be at least two blocks high and three blocks wide somewhere on the shape. Therefore A is wrong. |
| 6 | C | bow = a weapons used to fire arrows or a gesture of bending forward in respect.<br>object = an item or to resist something<br>axes = plural of ax or plural of axis. |
| 7 | D | Pattern: 1st number + 1st number with digits reversed = 2nd number |
| 8 | A | PLUM – JUMP = LEAP |
| 9 | B | Adding all three equations we get<br>3B + 3C + 3D + F + E + A = 33 + 26 + 22 = 81<br>F + A + E = 18 (given)<br>3B + 3C + 3D = 63<br>B + C + D = 21 |
| 10 | C | D B F C G A E<br>Or<br>D G B C F A E<br>In any case, the answer is always C |

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# Test 10

| Question Number | Answer | Solution |
|---|---|---|
| 1 | A | The experienced cyclist took a detour onto the highway that resulted with him riding dangerously. |
| 2 | D | The letters consist of 3 straight lines – making F the only option. |
| 3 | D | We start from the bottom and aim to reach the top. 'Normal' triangles and upside-down triangles form different groups. The position of the letters in the alphabet of the bottom 2 triangles add up to the position of the top triangle. Moreover, if the position passes 26, it will wrap around and start from 1 again.<br>E.g. A (1) + D (4) = E (5)<br>I (9) + V (22) = 31 = 26 +5 = E (5)<br>Therefore, E (5) + M (13) = R (18) = !<br>R (18) + R (18) = 36 = 26 + 10 = J (10) |
| 4 | D | Each number group has a product of 36. |
| 5 | C | INTERVIEW = a meeting of people face to face, especially for consultation<br>INTERROGATE = ask questions of someone closely, aggressively or formally(conview is not a real word, overview means summary, preview means look beforehand) |
| 6 | B | 100 cars → 25 Toyota, 50 Holden, 25 Ford<br>$\frac{3}{5} \times 100 = 60$<br>Therefore, 60 cars are black.<br>Half of all Holdens are black = $\frac{1}{2} \times 50 = 25$ black Holdens<br>All Fords are black = 25 black Fords<br>60 – 25 – 25 = 10<br>$\frac{10}{25}$ =40% |
| 7 | D | MERCY – compassion or forgiveness shown towards someone within someone's power |
| 8 | A | This grid contains 4 sets of 4 blocks. In each set, the outer facing three blocks add together to give the inner block.<br>9 + 3 + 17 = 29<br>6 + 10 + 7 = 23<br>9 + 3 + 17 = 29<br>8 + 13 + ? = 35 |
| 9 | B | Let the circle = x, triangle = y and square = z.<br>$x > 5y$ (1)<br>$x = 4z$ (2)<br>$2z < 4y$ (3)<br>(3) x 2: $4z < 8y$ (4)<br>Sub (1) into (4) $x < 8y$<br>$\therefore 5y < x < 8y$ |

| | | |
|---|---|---|
| | | Sub (2) into (1) $4z > 5y$<br>$\therefore 5y < 4z < 8y$<br>$\therefore 1.25y < z < 2y$<br>We want our answer to be between 5y and 8y.<br>Choice A is $2z + 5y$. $\therefore 7.5y < A < 9y$<br>Choice B is $2z + 3y$. $\therefore 5.5y < B < 7y$<br>Choice C is 8y. $\therefore C = 8y$<br>Choice D is $z + 4y$ $\therefore 5.25y < D < 6y$<br>B is the only solution that is between 5y and 8y for all possible answers. Thus B is the correct answer. |
| 10 | C | In the afternoon, the sun is in the west. Since the sun creates a shadow in front of him, he must be facing east. If he is facing east in the afternoon, he must have been walking south in the morning, making the answer C. In the morning, the sun was in the east, making the shadow appear on his right. Therefore, the answer is C. |

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