

Criteria Cognitive Aptitude Style

Free Test

Solutions Booklet

Instructions

This numerical reasoning test comprises **16 questions**, and you will have **8 minutes** in which to correctly answer as many as you can. Calculators are permitted for this test, and it is recommended you have some rough paper to work on.

You will have to work quickly and accurately to perform well in this test. If you don't know the answer to a question, leave it and come back to it if you have time. Each question will have ten possible answers, one of which is correct. If the exact correct answer is not provided, select the closest possible answer.

You can submit your test at any time. If the time limit is up before you click submit the test will automatically be submitted with the answers you have selected. It is recommended to keep working until the time limit is up.

Try to find a time and place where you will not be interrupted during the test. **The test will begin on the next page.**

← ○ □	↓ ● □	→ ○ ■
↓ ○ ■	→ ● ■	↑ ○ □
→ ● □	↑ ○ □	?

A ↑ ○ ■	B ← ○ ■	C → ● □	D ↑ ○ ■
E → ● ■	F ↑ ○ □	G ↓ ○ □	H ↑ ● □
I ↓ ○ □	J ← ● □	K ← ● ■	L → ○ □

Q1 Choose which one of the options best fits the missing symbol.

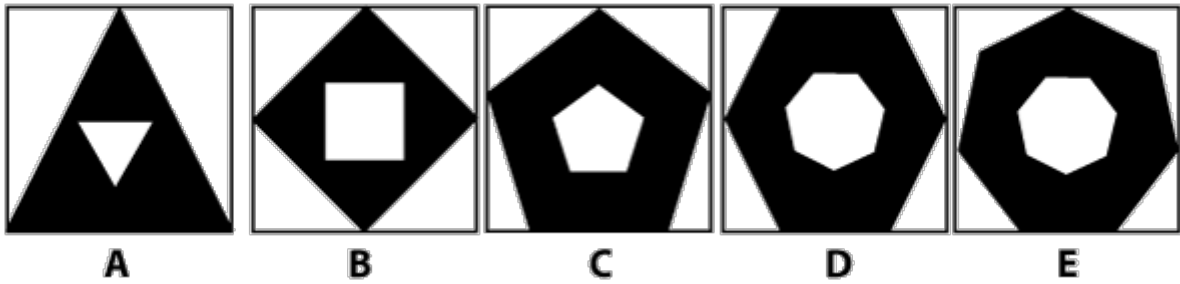
Answer: K

Rule 1: The arrow rotates anti-clockwise 90 degrees in via either rows or columns.

Rule 2: Along the row, the circle alternates from a fully shaded circle to a circle with a white center.

Rule 3: Along the column, the square alternates from a fully shaded square to a square with a white center.





Q2 Which one does not fit the pattern?

Answer: D

Rule 1: Large shape decreased in corner number by 1.

Rule 2: Small shape increased in corner number by 1.

Q3 Choose the word that is opposite, or almost opposite to the word:
RESTRAINT

Answer: Abandon

Solution: 'Control' is close synonym of restraint, as in to restraint or to control something. 'Curtalement' similarly is to restraint - another synonym. 'Restriction' is likewise very similar to restraint and entails the same thing. 'Subtly' can be seen as 'showing restraint' though this is less obvious. Nevertheless, it is not an opposite or close opposite of restraint. To 'Abandon' is to not show restraint and is an almost antonym of restraint.



Q4 Choose the word that is opposite, or almost opposite to the word: **MESS**

Answer: Order

Solution: *Disarray, clutter, and shambles are synonyms of mess rather than antonyms. Jumble is likewise a near synonym. Order is the opposite of mess.*

Q5 There are four pipes used to fill a tank at a constant rate. Altogether, the four pipes are able to fill up the tank in 4 hours. The owner wishes to reduce this time taken to 2 hours. How many more pipes filling up the tank at a constant rate will they need to install?

Answer: 4

Step 1: *The formulae we need to use is Volume = number * rate * time.*

$$V = n * r * t$$

$$V = 4 * r * 4$$

$$V = 16r$$

$$V / r = 16$$

Step 2: $V = n * r * 2$

$$V / r = 16 = n * 2$$

$$16 = n * 2$$

$$16 / 2 = n$$

$$n = 8$$

We therefore need 8 pipes which is 4 more than the original 4. Thus, the answer is 4.



Q6 Cherry is to blossom as:

Answer: Protein is to shake

Solution: *Cherry and blossom combine to become a singular phrase - cherry blossom. Paint and mix combine to make paint mix which is not a used phrase. Paper and book combine to become paper book which is not a used phrase. Protein and shake combine to become protein shake - which is indeed a used phrase. So the correct answer Protein is to shake.*

Q7 It takes Abbey 30 minutes to walk from Home to Work at a constant pace of 3mph. Abbey wants to reduce this time to 15 minutes. How much faster must Abbey walk?

Answer: 3mph

Step 1: *A pace of 3mph means that Abbey will therefore walk 1.5 miles in 30 minutes.*
 $S = d / t$

Step 2: $S = 1.5 / 0.25$
 $S = 6$
Abbey therefore needs to increase her speed to 6mph, and thus must walk 3mph faster.



There are a series of 5 objects: scissors, pencil, bottle, apple and banana. They are kept in either one of the three boxes - left, right and centre.

- Each box must contain at least 2 objects.
- The scissors are in the right box.
- The apple and banana are in the box next to one with the bottle.
- The pencil is in the left box.
- The bottle is in the same box with the pencil.

Q8 The sixth object, a coin, is placed in one of the three boxes. Which box is it placed in?

Answer: Right

Step 1: *The pencil is in the left box. The bottle is in the same box as the pencil, thus the left box, thus the left box has 2 items in it.*

Step 2: *The apple and banana are next to the box with the bottle, hence next to the left. This has to be the middle box. Thus, the middle box contains the apple and banana, 2 items.*

Step 3: *Lastly, the scissors are in the right box. Since each box must contain the at least 2 objects, and the right box requires one more object to meet this clause, the coin is placed in the right box.*

Q9 There are three numbers: 4, 26 and 18. A fourth number creates a group average of 12. What is this fourth number?

Answer: 0

Step 1: $(4 + 26 + 18 + X) / 4 = 12$

Step 2: $(4 + 26 + 18 + X) = 48$

Step 3: $48 - 4 - 26 - 18 = X$
 $X = 0$

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Rail Freight Traffic 2013 - 2019 (Annual change of average price %)



Year	Annual Number of Containers (million)	Overall Freight Moved (million net tonnes km)
2013	2.5	227
2014	3.0	215
2015	16.5	201
2016	18.0	193
2017	225	184
2018	27.5	172
2019	39.0	165

Q10 In 2016, Metal accounts for 8% of Freight Moved and 5% of containers. What was the average Freight Moved per container for Metal?

Answer: 17.16

Step 1: Locate the figure for overall freight moved in 2016: 193.
Calculate how much of this is Metal.
 $193 * 0.08 = 15.44$

Step 2: Locate the figure for annual number of containers for 2016: 18.
Calculate how many is 5% of this number.
 $18 * 0.05 = 0.9$

Step 3: Now calculate the average freight moved per container for metal:
 $15.44 / 0.9 = 17.16$

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Tip: Remember that for percentages, $1.0 = 100\%$. Therefore, $8\% = 0.08$

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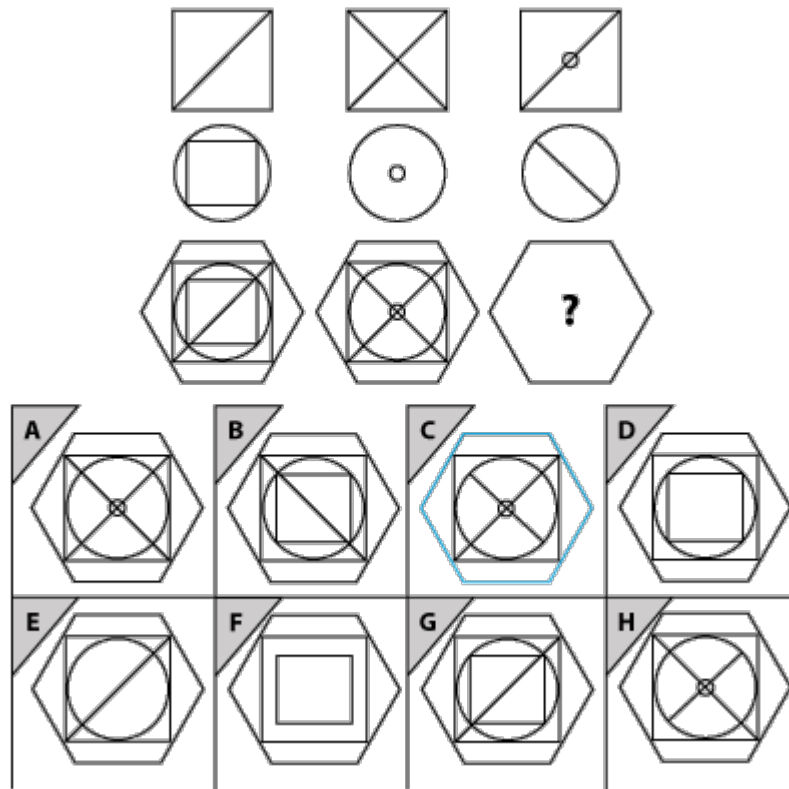
$$9 / 36 / 81 / ? / 225$$

Q11 Complete the sequence.

Answer: 144

Solution: We can notice that 9 is the square of 3. Likewise, 36 is the square of 6. The sequence is a series of square numbers. $81 = 9^2$, and $225 = 15^2$. We can then notice that these squares are multiples of 3. 3, 6, 9, ?, 15. Therefore we require the square of 12. $12 * 12 = 144$





Q12 Please select the answer that completes the matrix.

Answer: C

Solution: *The shapes in the column mesh together to form a whole. We can see that the shape will require: a small circle in the middle with a diagonal line from bottom left to top right across the square. And a circle with a diagonal line from bottom right to top left across the circle. This then fits into the hex. The only answer that fits this matrix is C.*



Q13 The arrival of Aphrodite's exquisite beauty is best _____ in Botticelli's The Birth of Venus.

Answer: Exemplified

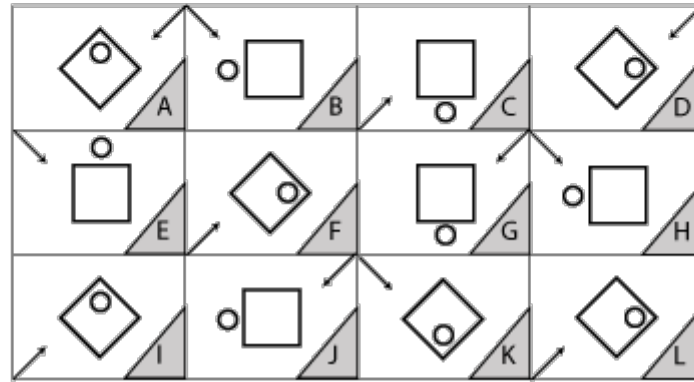
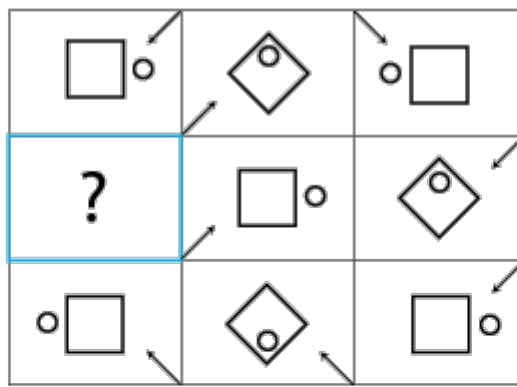
Solution: *The sentence requires a word like 'expressed' in that The Birth of Venus expresses Aphrodite's beauty. To adjust does not make too much sense in this context. Neither does chosen. Increased does not work. Pursued sort of works but is a peculiar or esoteric expression at best. Exemplified is a synonym of expressed and thus works well. Therefore, it is the correct answer.*

Q14 The clerk must have _____ the files as they could not be found where we thought they were.

Answer: Misplaced

Solution: *The sentence requires a word like 'lost' in that the files could not found. To propose does not make too much sense. Neither does conceived. Filed works but is a bit odd and does not particularly explain the situation. Treaded does not make sense. Misplaced is a synonym of lost and thus works well. Therefore, it is the correct answer.*





Q15 Choose which one of the options best fits the missing symbol.

Answer: K

Rule 1: From top to bottom, the arrow moves anticlockwise one place, then two places, then three places and so on, each time. This pattern continues onto the next column.

Rule 2: From left to right, the square rotates 45° clockwise each time. This pattern continues onto the next row.

Rule 3: From top to bottom, the circle moves one place counterclockwise around the square. This pattern continues onto the next column.

Rule 4: From top to bottom, the circle alternates between being inside and outside of the square. This pattern continues onto the next column.



Q16 Espresso sells for \$1.30 and Caffe Latte sells for \$2.40. How many more Espressos can you buy than Caffe Lattes with \$31.20?

Answer: 11

Step 1: $31.20 / 1.30 = 24$

Step 2: $31.20 / 2.40 = 13$

Step 3: $24 - 13 = 11$

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