

Maths and Logic: Recruitment Test # 1

Please read the following instructions very carefully before starting the test.

1. Print your name at the top of this page.
2. Answer **all** questions **in this test**, and do not use any **red** ink.
3. Do not write **beyond the bar** on the right border.
4. Do not remove the staples; if you need more space for calculations or notes, use the back of the preceding page.
5. For the correct answer you will receive the number of points indicated at the right hand side of each question.
6. Please note that a comma is used as the decimal separator in all decimal numbers and a point is used as thousand separators.
7. The points are assigned according to the time you should approximately need for each question.

NO CALCULATORS

NO MOBILE PHONES

NO BOOKS OR NOTES

Page #	2	3	4	5	Total
Questions	1 - 4	5 - 8	9 - 12	13 - 15	1 - 15
Max no. of points	18	13	16	13	60
Points received					

1. **Complete** the missing decimals, fractions and percentages:

(1 pts. for each correct answer = 7 pts.)

Decimal form	Percentage form	Fraction form
	80%	
0,75		$\frac{3}{4}$
0,4		
		$\frac{1}{20}$

2. Calculate **the values** of the following expressions:

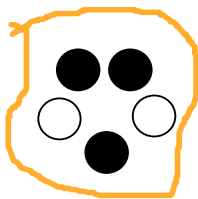
(2 pts. for each correct answer = 4 pts.)

a) $\frac{2}{5} - \frac{4}{3} \cdot \left(-\frac{9}{8}\right) =$

b) $\frac{3}{5} - 3 + \frac{13}{6} =$

3. There are 2 white and 3 black balls in a bag. What is the probability to grab a white ball on the first try?

(3 pts. for the correct answer = 3 pts.)



50%

40%

60%

20%

4. The weight of a bottle with its cap is 104 g. The bottle is 100 g heavier than the cap. How much does the cap weigh?

(4 pts. for the correct answer = 4 pts.)

Total points on this page #2




5. Calculate the value of the expression:

(3 pts. for the correct answer = 3 pts.)

$$\frac{\frac{3}{2} \cdot [\sqrt{(57-8)} - 24 \div 8] + 6}{\frac{1}{7} \cdot 28 - \frac{7}{2}} =$$

6. At a dinner you count 5 people. If everybody wants to clink glasses with everybody, how many times do they clink the glasses in total?

(3 pts. for the correct answer = 3 pts.)



5 10 9
 20 25


7. Calculate the proportions in percentages:

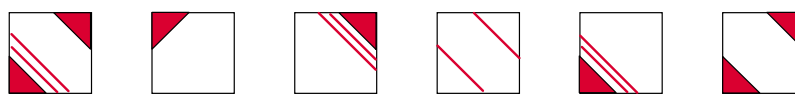
(2 pts. for each correct answer = 4 pts.)

- a) 22 of 2.000 →
- b) 8 of 20 miles →

8. There are four figures in first row of the illustration. Their sequence is subject to a certain rule. Which of the six figures in the second row completes the sequence according to the rule? **Tick the box** below the correct figure.

(3 pts. for the correct answer = 3 pts.)

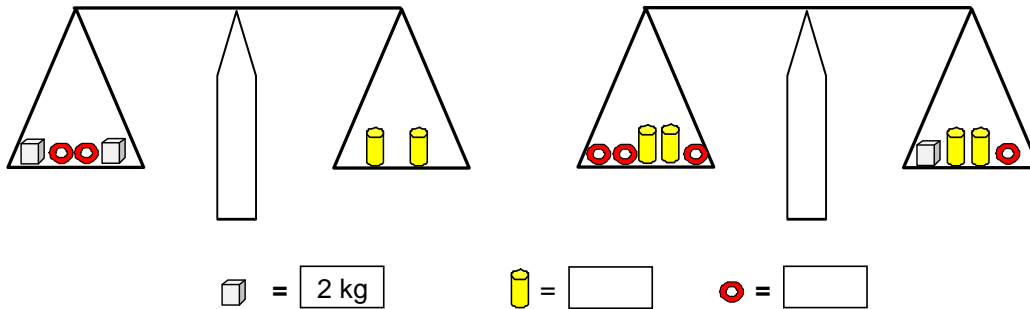






9. The scales are at equilibrium. What is the **weight of each element**?

(4 pts. for the correct answer = 4 pts.)



10. What is the relation of the four expressions? Arrange them by value in **increasing order** (as for instance $A < B < C < D$).

(3 pts. for each correct answer = 6 pts.)

a) $A = 10\%$; $B = \frac{0,5}{50}$; $C = 0,001$; $D = \frac{1}{25} \rightarrow _ < _ < _ < _$

b) $A = \left(\frac{3}{4}\right)^2$; $B = \frac{3^2}{4}$; $C = \frac{3}{4^2}$; $D = \frac{3}{4} \rightarrow _ < _ < _ < _$

11. When asked about her age, Anna said: „Multiply my age by 99, add 208 to the result and then subtract 99, the total value will be 1000”. How old is Anna?

(3 pts. for the correct answer = 3 pts.)

12. Calculate the **new price**, if the old price (60 EUR) was at first increased by 15 % and then decreased by 5 %.

(3 pts. for the correct answer = 3 pts.)

Total points on this page #4



13. The numbers in the following table are filled in according to a certain system.

Complete the table by filling in the last **empty field**:

(3 pts. for each correct answer = 6 pts.)

a)

7	10	-3
4		0
1	-2	3

b)

3		27
-2	4	-8
1	1	1

14. Transform into **decimal numbers**:

(1 pts. for each correct answer = 3 pts.)

a) $1,5\% =$

b) $\frac{3}{15} =$

c) $\frac{1}{2} - 25\% =$

15. What is the percentage of increase/decrease, if:

(2 pts. for each correct answer = 4 pts.)

a) The old price is 24 EUR; new price is 20,40 EUR →

b) The old price is 1,80 EUR; new price is : 2,25 EUR →

Total points on this page #5



Answers

1.

Decimal form	Percentage form	Fraction form
0,8	80%	$\frac{8}{10}$
0,75	75%	$\frac{3}{4}$
0,4	40%	$\frac{4}{10}$
0,05	5%	$\frac{1}{20}$

2.

a) $\frac{19}{10}$

b) $-\frac{7}{30}$

3. The probability is 40%.

4. The cap weighs 2g.

5. 24

6. 10 clinks.

7.

c) 1.1%

d) 40%

8.



9. The cube weighs 2kg, the cylinder weighs 3 kg, and the ring weighs 1 kg.

10.

a) $C < B < D < A$

b) $C < A < D < B$

11. Anna is 9 years old.

12. The new price is 65,55 EUR

13.

a) 4

b) 9

14.

a) 0,015

b) 0,2

c) 0,25

15.

a) 15% decrease

b) 25% increase