Practice Numeracy Test

for the selection procedure of Hotel Management School Maastricht

To give you an idea of the topics covered and the level of the actual numeracy test, we have created this practice sample. The actual numeracy test will consist of **35 multiple choice and open questions and will last 45 minutes**. You may use pen and paper. **A calculator is not allowed**. During the test, you cannot navigate back and forth between the questions. Once you have completed a question and entered your answer, you cannot go back. Round amounts of money to the nearest whole cent, unless otherwise specified.

Questions

1. Calculate: (3,750 + 2,250) ÷ 25 − 18.

2. Which number is larger: −14.807 or −14.78?

3. Write 37.5% as a fraction.

4. What number comes next in the sequence: 4, 9, 14, 19, …?

5. A hotel room costs €84.50. The price increases by 6%. How much is the increase, rounded to cents?

6. Write 17/40 as a percentage.

7. If $y = 5x − 7$, calculate y when $x = −4$.

8. Two lines are given by $f(x)=3x+2$ and $g(x)=3x−5$. How do the graphs relate?

9. Calculate $(x − 5)^2$ for $x = −2$.

10. Solve: $7x − 9 = 40$.

11. Calculate: $18 - 4 \times 3 + 12 \div 2$.

12. Calculate: $(-6)^2 - 3^2$.

13. Which is smaller: −3.06 or −3.6?

14. A €120 item is discounted by 15%. What is the new price?

15. Convert 0.875 to a percentage.

16. Calculate 5/8 + 3/16.

17. If $y = -2x + 11$, calculate y when $x = 6$.

18. Line f has equation $y = 4x - 1$. What is its slope?

19. Solve: $3(x + 4) = 27$.

20. Calculate: $(2{,}400 - 875) \div 40$.

21. A restaurant bill is €146.80. A 12% service charge is added. What is the total?

22. Write 7/25 as a decimal and as a percentage.

23. Calculate: $(-12 + 7) \times (-3)$.

24. Solve: $5x + 12 = 2x + 30$.

25. For $f(x)=2x+9$, find $f(-5)$.

26. A price rises from €75 to €84. What is the percentage increase?

27. Calculate: $2^3 + 4^2 - 5$.

28. The sequence is 81, 72, 63, 54, … What is the 10th term?

29. Solve: $4(2x - 3) = 28$.

30. Two lines are $f(x)=-2x+7$ and $g(x)=x-2$. Find their intersection point.

31. A hotel gives 20% discount and then an additional 10% discount. What percentage of the original price is paid?

32. Calculate: $(3/4 - 1/6) \times 12$.

33. A room price of €160 is increased by 12% and then reduced by 5%. What is the final price?

34. Solve: $(x - 3)/4 = 7$.

35. For $f(x)=-3x+12$, for which x is $f(x)=0$?

Answers Practice Numeracy Test

1. 222

6,000 ÷ 25 = 240; 240 − 18 = 222.

2. −14.78

−14.78 is closer to zero.

3. 3/8

1/8 = 12.5%; 3/8 = 37.5%

4. 24

5. €5.07

1% = €0.845; 6% = 6 x €0.845 = €5.07

6. 42.5%

4,25 ÷ 10 = 0.425 = 42.5%.

7. −27

8. They run parallel to each other.

They have the same slope (3) but different y-intercepts.

9. 49

$(-2 – 5)^2 \rightarrow -7^2 = 49$

10. x = 7

7x = 49; x = 7

11. 12

18 – 12 + 6 → 6 + 6 = 12

12. 27

$(-6)^2 - 9 \rightarrow 36 - 9 = 27$

13. −3.6

14. €102

120 × 0.85 = €102.

15. 87.5%

16. 13/16

10/16 + 3/16 = 13/16.

17. −1

18. 4

19. x = 5

3(x+4)=27 → x+4=9 → x=5.

20. 38.125

1525 ÷ 40 → 1200 ÷ 40 = 30 → 320 ÷ 40 = 8 → 5 ÷ 40 = 0.125 (⅛) → 38.125

21. €164.42

10% = €14.68 en 2% = 2 x €1.47 = €2.94 → together €17.62 → €146.80 + €17.62 = €164.42

22. 0.28 and 28%

23. 15

24. x = 6

5x+12=2x+30 → 3x=18 → x=6.

25. −1

f(−5)=2(−5)+9 → f(−5)= -10 + 9 → f(−5)=-1

26. 12%

(84−75)/75 × 100% = 12% or using a conversion table

75	100%
84	?

8400 : 75 → 7500 : 75 = 100 → 900 : 75 = 12 → 112%

27. 19

28. 0

Arithmetic sequence: subtract 9 each time. 10th term = 81−9×9=0.

29. x = 5

30. (3, 1)

−2x+7=x−2 → −2x+2x+7=x+2x−2 → 7=3x−2 → 9=3x → x=3. Fill in one of the two formula. For example: g(x)=x−2 → g(3)=3−2=1. That is why the y-coordinate is 1.

31. 72%

100% × 0.80 × 0.90 = 72%.

32. 7

9/12 - 2/12 → 7/12 x 12 = 7

33. €170.24

160 × 1.12 × 0.95 = €170.24.

34. x = 31

x-3 = 7 x 4 → x-3 = 28 → x = 28 + 3 = 31

35. x = 4

0 = -3 x + 12 → -12 = -3x → x = -12 : -3 = 4