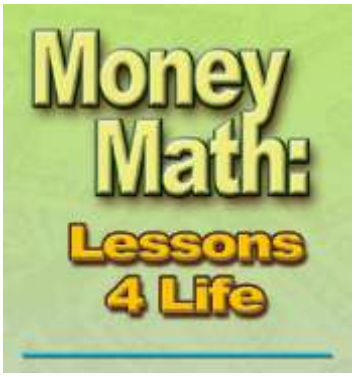

Test Yourself

All Multiple choice

Instructions:

1. Read the questions carefully.

2. Solve each problem and decide which of the offered answer choices is correct.

3. ENJOY 

Percentages Challenges

1. Work out the cost of the tablet if it usually costs € 150.

◯ € 100 ◯ € 110 ◯ € 120 ◯ € 130

2. a) Which Offer is better?

b) How much would it save to you?

◯ *€ 4.5* ◯ *€ 3.5* ◯ *€ 5* ◯ *€ 2.5*

3. The percentage of skittles in a packet are split up in the following percentages:

Red – 20%

Yellow – 16%

Green – 24%

Purple

Orange

There is the same number of purple & orange. If there are 24 yellow skittles, how many purple ones are there?

◯ 20 ◯ 24 ◯ 30 ◯ 32

4. Anna, Mark , Emily and Jacob share the lottery prize money in the following percentages

Anna – 12%

Mark – 43%

Emily – 28%

Jacob the rest

If Jacob gets € 102, how much will they win in total?

◯ € 600 ◯ € 640 ◯ € 900 ◯ € 320

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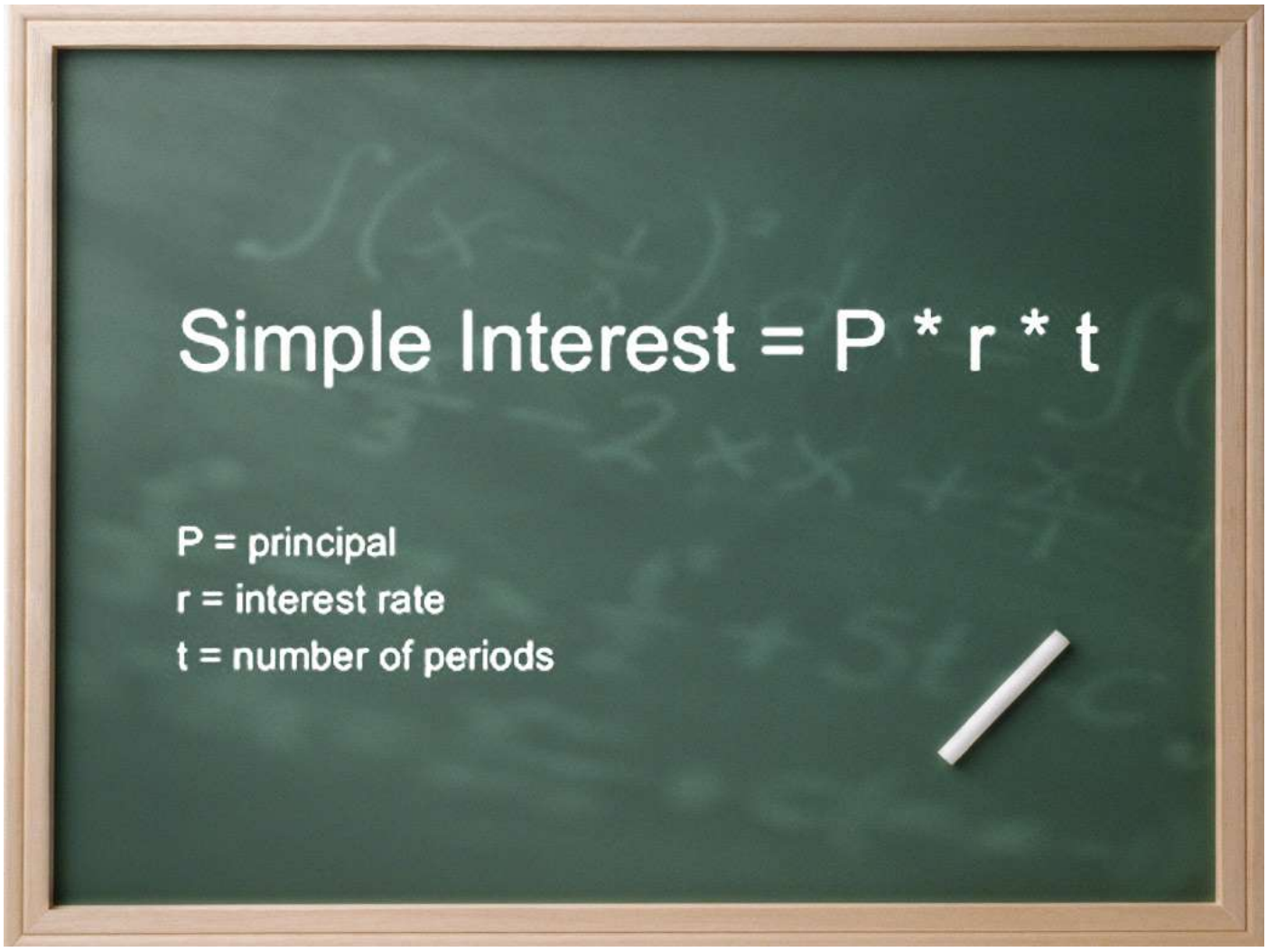
5. **Figure This!** A discount of **20% off** the original price , followed by a discount of **15% off** the sale price, is the same as a discount of

◯ 32% ◯ 35% ◯ 25% ◯ 5%

the original price.

Simple Interest



6. The annual interest payable on a deposit of € 250 at 5% simple interest is:

◯ € 125 ◯ € 12.5 ◯ € 12 ◯ € 20

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7. Mary earned € 320 when she invested € 12 000 for 8 months. Her rate of simple interest was:

◯ 3% ◯ 4% ◯ 5% ◯ 6%

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8. John invested a sum of money, earning € 750 simple interest at the rate of 6% for over 2 years. The amount invested was:

◯ € 88.80 ◯ € 3125 ◯ € 6250 ◯ € 2125

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9. Peter invested a certain sum of money at 8% simple interest for **'n'** years. At the end of **'n'** years, Peter got back 4 times of his original investment. What is the value of **'n'**?

◯ 50 years ◯ 25 years ◯ 12 years 6 months ◯ 37 years 6 months

---

10. Who is getting the best deal?

	Money invested at the start of the year	**Simple Interest**	**Money at the end of the year**
Michelle	€ 1000	€ 60	€ 1060
Gabriel	€ 2000	€ 100	€ 2100
Katy	€ 3000	€ 120	€ 3120

◯ Michelle ◯ Gabriel ◯ Katy

---

11. Mr. Money invested an amount of € 15 000 divided in two different Schemes **A** and **B** at the simple interest rate of 15% and 12% respectively. If the total amount of simple interest earned in 2 years was € 3960, what would be the amount invested in Scheme **B**?

◯ € 5000 ◯ € 6000 ◯ € 9000 ◯ € 10 000

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12. A sum of money at simple interest rises to € 2240 in 2 years and to € 2600 in 5 years. What is the principal amount?

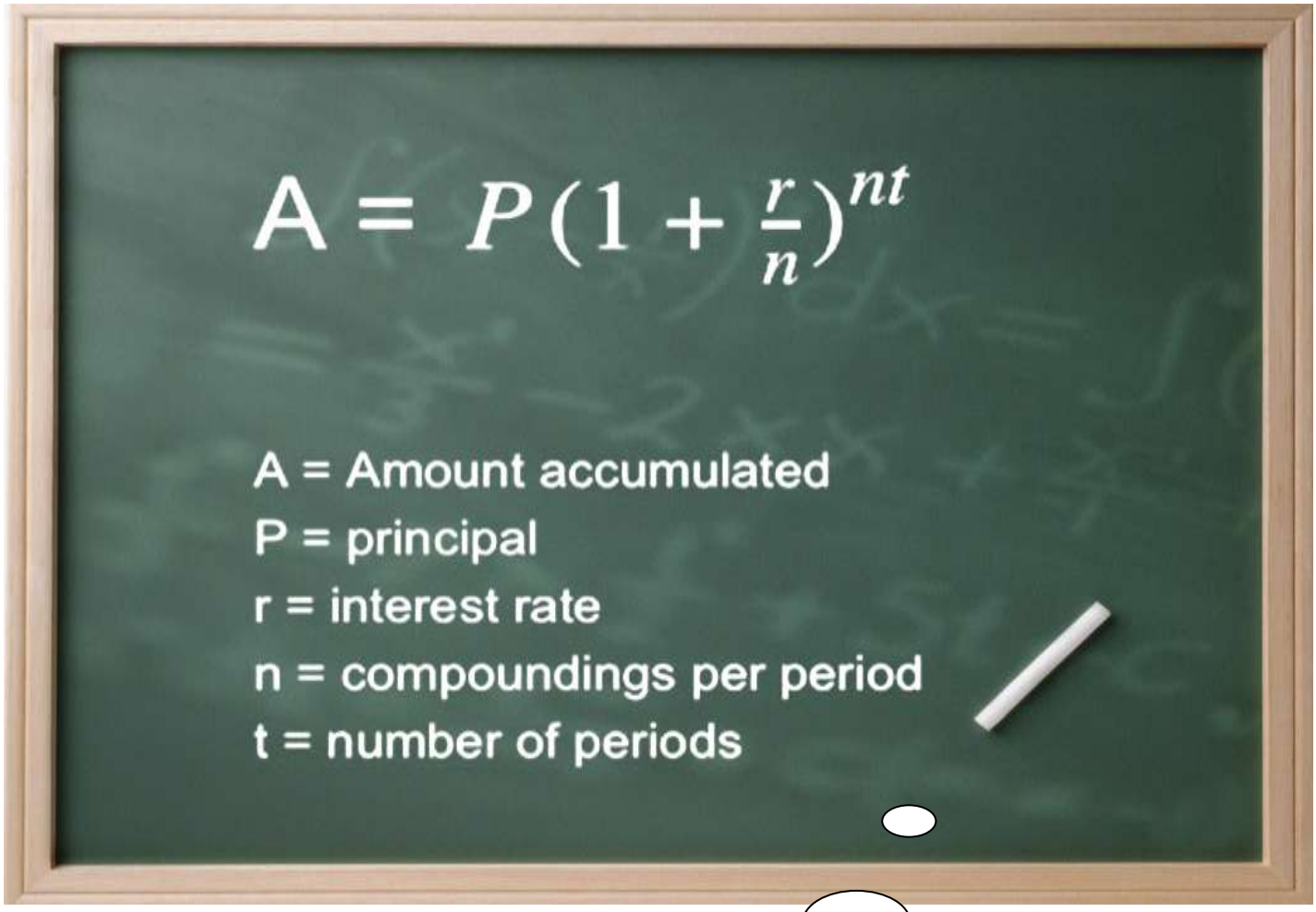
◯ € 15200 ◯ € 1880 ◯ € 2000 ◯ € 2100

---

13. The simple interest on a certain sum of money at the rate of 5% for 8 years is € 840. At what rate of intrest the same amount of interest can be received on the same sum after 5 years ?

◯ 6% ◯ 8% ◯ 9% ◯ 10%

Compound Interest



If compounded annually, ***n = 1***

If compounded semi - annually, ***n = 2***

If compounded monthly, ***n = 12***

If compounded weekly, ***n = 52***

If compounded daily, ***n = 360 (or 365)***

14. Paul has the choice of investing his money at compound interest with compounding as indicated below. Which situation would return him the most interest?

◯ yearly ◯ six-monthly ◯ monthly ◯ daily

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15. An amount of € 12 000 is invested for a period of 9 months at 3% compounded ***monthly.*** The compound interest formula to calculate the future value of an investment over a period of time is:

$$A = P\left(1 + \frac{r}{n}\right)^{nt}$$

a) The value of ***' t '*** in the formula would be:

◯ 0.75 ◯ 12 ◯ 3 ◯ 9

b) The value of ***'n'*** in the formula would be:

◯ 0.75 ◯ 12 ◯ 3 ◯ 9

c) The value of ***'A'*** at the end of the time period would be closest to:

◯ € 12 030 ◯ € 12 070 ◯ € 12 273 ◯ € 15 657

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16. How long would it take for € 5000 invested at 5% compound interest with yearly compounding, to make it double?

◯ 5 years ◯ 7 years ◯ 10 years ◯ 14 years

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17. You have € 1 000, and want it to grow to € 2 000 in 4 years, what compound interest rate do you need?

◯ 11.89% ◯ 18.92% ◯ 41.42% ◯ 25%

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18. Your goal is to have € 3 500 in 10 years. The rate of interest is 3% compounded annually, so how much should you start with?

◯ € 2 126.16 ◯ € 2 450 ◯ € 2 604.33 ◯ € 2 629.60

Loans

- When you **borrow** money from a bank or other lender you enter into a contract with them which governs the repayment.

- You have to be 18 years old to be able to enter into such a contract.

For example, you have arranged to borrow some money from a bank:

- The bank will offer you a period of time over which you can repay the money usually stated in months eg. 12, 18, 24 months etc.
- The bank will tell you what their interest rate is stated as Annual Percentage Rate or APR.
- They will tell you how much interest is charged per month and how much your monthly repayments will be.
- They should also total these figures up so you can see how much you are paying in total.
- You will also agree upon the means of payment e.g. standing order, cash payments, cheques etc. and the date each month when you must pay.

LOAN AMORTIZATION TABLE

		A			B		A - B
Year	Interest P.A (%)	Loan Start Balance	Yearly Installment	Interest Paid	Principle Reduction	Total Principle Paid	Loan End Balance
1	5	80,000	6,418	4000	2418	2418	77,582
2	5	77,582	6,418	3879	2539	4958	75,043
3	5	75,043	6,418	3752	2666	7624	72,377
4	5	72,377	6,418	3619	2800	10424	69,577
5	5	69,577	6,418	3479	2940	13364	66,637
6	5	66,637	6,418	3332	3087	16451	63,550
7	5	63,550	6,418	3178	3241	19692	60,309
8	5	60,309	6,418	3015	3403	23095	56,906
9	5	56,906	6,418	2845	3573	26668	53,333
10	5	53,333	6,418	2667	3752	30420	49,581
11	5	49,581	6,418	2479	3939	34359	45,642
12	5	45,642	6,418	2282	4136	38495	41,506
13	5	41,506	6,418	2075	4343	42838	37,163
14	5	37,163	6,418	1858	4560	47398	32,603
15	5	32,603	6,418	1630	4788	52186	27,815
16	5	27,815	6,418	1391	5028	57214	22,787
17	5	22,787	6,418	1139	5279	62493	17,508
18	5	17,508	6,418	875	5543	68036	11,965
19	5	11,965	6,418	598	5820	73856	6,145
20	5	6,145	6,456	307	6149	80005	-4

Buying on Terms

19. A set of photo-voltaic cells (solar panels) costs € 4000. Instead of paying cash, Maria would pay **weekly** payments of € 40 for 2 years.

a) How much would she pay altogether?

◯ € 4160 ◯ € 4400 ◯ € 5360 ◯ € 6080

b) What would be the extra interest paid?

◯ € 400 ◯ € 160 ◯ € 80 ◯ € 360

c) What simple interest rate would be paid?

◯ 5% ◯ 4% ◯ 3% ◯ 2%

Hire Purchase with a Deposit

20. A greenhouse costs € 6000. Instead of paying cash, Stan has paid a 20% deposit and 24 **monthly** payments of € 220.

a) How much was the deposit?

◯ € 120 ◯ € 300 ◯ € 3000 ◯ € 1200

b) How much was borrowed?

◯ € 3000 ◯ € 4800 ◯ € 2400 ◯ € 1200

c) How much will he pay altogether?

◯ € 7200 ◯ € 6480 ◯ € 6220 ◯ € 6800

d) What is the extra simple interest paid?

◯ € 220 ◯ € 800 ◯ € 1200 ◯ € 480

e) What simple interest rate would be paid?

◯ 5% ◯ 4% ◯ 3% ◯ 2%