

Repeated percentage change: compound interest

A cash Individual Savings Account, or ISA, is an account which benefits from higher interest rates due to tax exemptions, although how much you can put into the account each year is limited. Different banks offer different Annual Equivalent Rates (AER). Below are some currently existing ISAs along with an opening balance that will be put into the account and left untouched.

Natwest

Opening Balance: £980

Interest: 0.75% AER

| NatWest | | | |
|---|-------------|-------------|----------------|
| Cash ISA | | | |
| | Transfer in | Balance | AER (variable) |
| Our instant access Cash ISA gives you immediate access to your money. | ✓ | £0 - 24,999 | 0.75% |
| You can also save the way you want – either as a lump sum, as a standing order or simply pay in whenever you choose to. | ✓ | £25,000 + | 1.00% |
| The interest rate on your savings is variable, which means the rate can go up or well as down. | | | |

Santander (123)

Opening Balance: £920

Interest: 1.7% AER

| Santander | | |
|----------------------|-----------------------|-----------------------------|
| Account name | 2 Year Fixed Rate ISA | 1 2 3 2 Year Fixed Rate ISA |
| AER/Tax-free (Fixed) | 1.40% | 1.70% |

To apply for a 2 Year Fixed Rate ISA you must be a UK resident, **aged 16 or over**.
Guarantee your interest rate when you save your money in a Fixed Rate ISA.

Halifax

Opening Balance: £940

Interest: 1.25% AER

| HALIFAX | |
|------------------------------|---|
| Account Name | ISA Saver Online |
| Interest rates (AERs) | 1.25% tax free/AER variable (including 12 month fixed bonus of 1.00%). |
| Tax Status | Interest will be paid tax free. |

Under the mattress!

Opening Balance: £1000

Interest: 0%



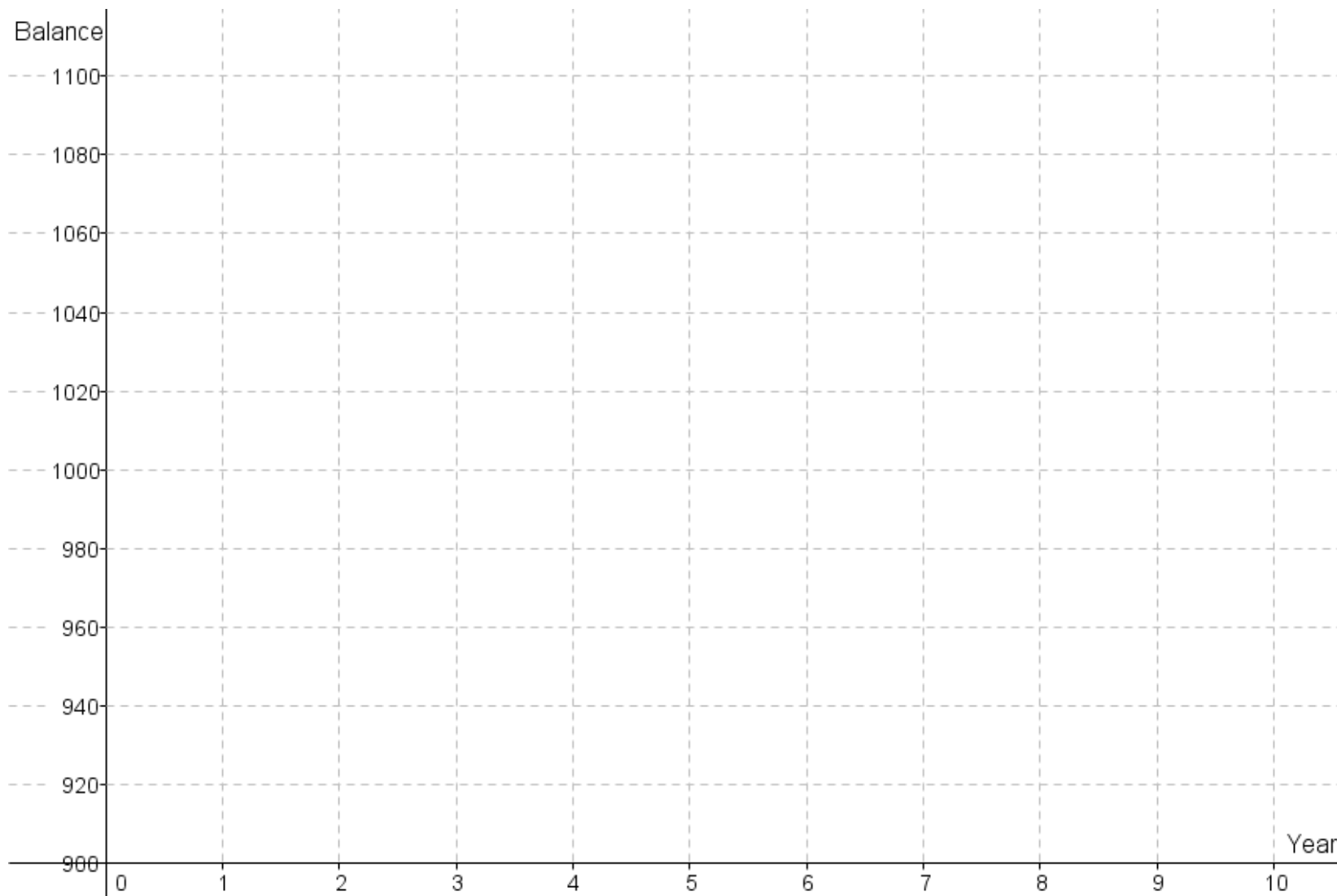
Which account will have the highest balance?

Complete the following table:

| Year | Mattress (0%) | Natwest (0.75%) | Halifax (1.25%) | Santander (1.7%) |
|---------|---------------|-----------------|-----------------|------------------|
| Opening | 1000 | 980 | 940 | 920 |
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| x | | | | |

On the axis provided, sketch four curves representing the four account balances.


Comment on which account has the higher balance at any given time and the shape of the graph lines.



Repeated percentage change: depreciation


Depreciation is the decrease in value of an asset (or valued object). Companies have to apply a percentage decrease to their asset for financial recording purposes (although it isn't an exact science). Below are four new cars along with a depreciation rate that has been selected to be applied to them.

VW Golf Cost: £19,000 Depreciation Rate: 14%



Volkswagen GOLF MK6 CABRIOLET 1.6 TDI SE Bluem... £19,000
Includes 2 Free Services* Trade seller, distance: 15 miles
✓ MANUFACTURER APPROVED
2014 (14 reg) | Convertible | 50 miles | Manual | 1.6L | Diesel
Steel Grey Metallic, *Buy this car through Volkswagen finance and gain 2 Free Services., Drivers knee airbag, RCD 310 radio/mp3 single CD player with 8 speakers + aux-in socket, 17 ...

Nissan Juke Cost: £15,000 Depreciation Rate: 9.9%




Nissan Juke 1.5 dCi Acenta Premium 5dr £15,000
Trade seller, distance: 73 miles
NEW CAR: SAVE £2,865
2014 (64 reg) | Hatchback | 5 miles | Manual | 1.5L | Diesel
Silver, Call us on (0844) 2488417 (Local rate) We have over 5,000 vehicles in our group stock. P/X welcome, £15,000

Renault Megane Cost: £12,000 Depreciation Rate: 6.5%



Renault Megane 1.5 dCi Dynamique TomTom Energy 5dr £12,000
Warranty until May 2018 Trade seller, distance: 94 miles
NEW CAR
2014 (14 reg) | Hatchback | 15 miles | Manual | 1.5L | Diesel
Metallic - Diamond black, 1 owner, Cloth upholstery, Solid paint, 16" Kaleido alloy wheels, Carminat Tom Tom, Air recirculation system, Body colour door handles, Body colour ...

Hyundai I20 Cost: £9,500 Depreciation Rate: 5.2%



Hyundai I20 1.2 Active 5dr £9,500
DELIVERY MILES, £30 ROAD TAX Trade seller, distance: 8 miles
✓ MANUFACTURER APPROVED
2014 (14 reg) | Hatchback | 50 miles | Manual | 1.2L | Petrol
Coral White, 1 owner, Service History, Cloth, Black Charcoal, Air conditioning, Airbags - driver and front passenger, Airbags - full-length curtain, Airbags - side, Anti-lock brakes ...

Which car will have the highest value?

Complete the following table:

| Year | I20 (5.2%) | Megane (6.5%) | Juke (9.9%) | Golf (14%) |
|---------|------------|---------------|-------------|------------|
| Opening | £9,500 | £12,000 | £15,000 | £19,000 |
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| x | | | | |

On the axis provided, sketch four curves representing the four car values

Comment on which car has the higher value at any given time and the shape of the graph lines.

