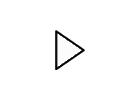
Watch the videos listed below and answer the associated questions.

Video:

Lambda Calculus - Computerphile (12:39)

[Lambda Calculus - Computerphile](https://www.youtube.com/watch?v=eis11j_iGMs)

[(Links to an external site.)](https://www.youtube.com/watch?v=eis11j_iGMs)

[](https://www.youtube.com/watch?v=eis11j_iGMs)

1) Why should you be interested in learning about Lambda Calculus?

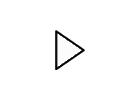
2) How do you encode the concepts of TRUE, FALSE, NOT, AND, OR?

Video:

Essentials: Functional Programming's Y Combinator - Computerphile (13:25)

[Essentials: Functional Programming&#39;s Y Combinator - Computerphile](https://www.youtube.com/watch?v=9T8A89jgeTI)

[(Links to an external site.)](https://www.youtube.com/watch?v=9T8A89jgeTI)

[](https://www.youtube.com/watch?v=9T8A89jgeTI)

3) What is important about the Lambda Calculus expression called 'Y Combinator'?

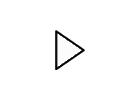
4) Write the Y Combinator expression in Lambda Calculus.

Video:

Functional Programming & Haskell - Computerphile (9:18)

[Functional Programming &amp; Haskell - Computerphile](https://www.youtube.com/watch?v=LnX3B9oaKzw)

[(Links to an external site.)](https://www.youtube.com/watch?v=LnX3B9oaKzw)

[](https://www.youtube.com/watch?v=LnX3B9oaKzw)

5) Where did the language 'Haskell' get its name?

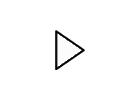
6) In the video it was mentioned that Erlang was used to code what?

Video:

Programming Paradigms - Computerphile (10:43)

[Programming Paradigms - Computerphile](https://www.youtube.com/watch?v=sqV3pL5x8PI)

[(Links to an external site.)](https://www.youtube.com/watch?v=sqV3pL5x8PI)

[](https://www.youtube.com/watch?v=sqV3pL5x8PI)

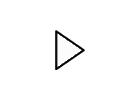
7) How is 'pattern matching' used?

Video:

P vs NP on TV - Computerphile (5:48)

[P vs NP on TV - Computerphile](https://www.youtube.com/watch?v=dJUEkjxylBw)

[(Links to an external site.)](https://www.youtube.com/watch?v=dJUEkjxylBw)

[](https://www.youtube.com/watch?v=dJUEkjxylBw)

8) Complete this sentence: "NP problems are hard to solve but easy to \_\_\_\_\_"

9) What is the example of an NP problem used in the video?

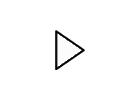
10) What are the TV shows mentioned in the video?

Video:

Floating Point Numbers - Computerphile (9:15)

[Floating Point Numbers - Computerphile](https://www.youtube.com/watch?v=PZRI1IfStY0)

[(Links to an external site.)](https://www.youtube.com/watch?v=PZRI1IfStY0)

[](https://www.youtube.com/watch?v=PZRI1IfStY0)

11) Floating point numbers are essentially what?

12) Computers perform scientific notation in what base?

13) What is the problem with adding 1/3 + 1/3 + 1/3 using base 10 and ignoring recurring numbers?

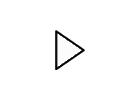
14) What is 1/10 in base 2?

Video:

The Most Difficult Program to Computer? - Computerphile (14:54)

[The Most Difficult Program to Compute? - Computerphile](https://www.youtube.com/watch?v=i7sm9dzFtEI)

[(Links to an external site.)](https://www.youtube.com/watch?v=i7sm9dzFtEI)

[](https://www.youtube.com/watch?v=i7sm9dzFtEI)

15) What is the name of the function discussed in the video?

16) Can Ackermann's function be coded using for or 'DO' loops?

17) What is the value of Ackermann(4,1)?

18) How many minutes will the machine in the video take to calculate Ackermann(4,2)

19) The performance characteristic of Ackermann's function is described as what?

Video:

Programming Loops vs Recursion - Computerphile (12:31)

[https://www.youtube.com/watch?v=HXNhEYqFo0o](https://na01.safelinks.protection.outlook.com/?url=https%3A%2F%2Fwww.youtube.com%2Fwatch%3Fv%3DHXNhEYqFo0o&data=02%7C01%7Ckelly.french%40uta.edu%7C1182c2ca070d41af7c4d08d650c5d2ca%7C5cdc5b43d7be4caa8173729e3b0a62d9%7C0%7C0%7C636785207900585150&sdata=r%2BkGxWib6%2FZK2CI%2FTLawGcHgQp1uwV3SSniwMtb3FrU%3D&reserved=0)

[(Links to an external site.)](https://na01.safelinks.protection.outlook.com/?url=https%3A%2F%2Fwww.youtube.com%2Fwatch%3Fv%3DHXNhEYqFo0o&data=02%7C01%7Ckelly.french%40uta.edu%7C1182c2ca070d41af7c4d08d650c5d2ca%7C5cdc5b43d7be4caa8173729e3b0a62d9%7C0%7C0%7C636785207900585150&sdata=r%2BkGxWib6%2FZK2CI%2FTLawGcHgQp1uwV3SSniwMtb3FrU%3D&reserved=0)

20) A loop nested in another loop has the performance characteristic of what?

21) What was the limitation of Fortran mentioned in the video?

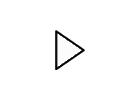
22) What real-world use needs complex recursion?

Video:

Why 'C' is so influential - Computerphile (10:50)

[Why C is so Influential - Computerphile](https://www.youtube.com/watch?v=ci1PJexnfNE)

[(Links to an external site.)](https://www.youtube.com/watch?v=ci1PJexnfNE)

[](https://www.youtube.com/watch?v=ci1PJexnfNE)

23) There was a need to have a language that could cope with what?

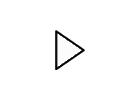
24) C is most powerful when considered as the classical what?

Video:

Essentials: Pointer Power! - Computerphile (20:00)

[Essentials: Pointer Power! - Computerphile](https://www.youtube.com/watch?v=t5NszbIerYc)

[(Links to an external site.)](https://www.youtube.com/watch?v=t5NszbIerYc)

[](https://www.youtube.com/watch?v=t5NszbIerYc)

25)

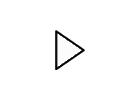
What are the names of the two fields of the 'THING' structure?

Video:

Triple Ref Pointers - Computerphile (8:27)

[Triple Ref Pointers - Computerphile](https://www.youtube.com/watch?v=0ZEX_l0DFK0)

[(Links to an external site.)](https://www.youtube.com/watch?v=0ZEX_l0DFK0)

[](https://www.youtube.com/watch?v=0ZEX_l0DFK0)

26)

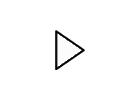
What is the advantage of the 'Triple Ref Technique'?

Video:

Arrays vs Linked Lists - Computerphile (29:57)

[Arrays vs Linked Lists - Computerphile](https://www.youtube.com/watch?v=DyG9S9nAlUM)

[(Links to an external site.)](https://www.youtube.com/watch?v=DyG9S9nAlUM)

[](https://www.youtube.com/watch?v=DyG9S9nAlUM)

27) What is the procedure used in the video to compare the different structures?

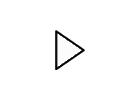
28) Why is the reverse array faster on the Atari?

Video:

Should Everybody Learn to Code? - Computerphile (8:46)

[Should Everybody Learn to Code? - Computerphile](https://www.youtube.com/watch?v=9TlYteJAwMQ)

[(Links to an external site.)](https://www.youtube.com/watch?v=9TlYteJAwMQ)

[](https://www.youtube.com/watch?v=9TlYteJAwMQ)

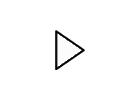
29) What would be the goal of requiring people to be exposed to coding?

Video:

Programming BASIC and Sorting - Computerphile (13:56)

[Programming BASIC and Sorting - Computerphile](https://www.youtube.com/watch?v=Ou2A-JWszVA)

[(Links to an external site.)](https://www.youtube.com/watch?v=Ou2A-JWszVA)

[](https://www.youtube.com/watch?v=Ou2A-JWszVA)

30):

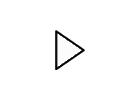
List 3 or more of the different sort algorithms mentioned in the video

Video:

Turing & The Halting Problem - Computerphile (6:13)

[Turing &amp; The Halting Problem - Computerphile](https://www.youtube.com/watch?v=macM_MtS_w4)

[(Links to an external site.)](https://www.youtube.com/watch?v=macM_MtS_w4)

[](https://www.youtube.com/watch?v=macM_MtS_w4)

31)

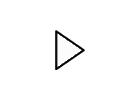
What is the 'Decision Problem'?

Video:

The Art of Abstraction - Computerphile (5:21)

[The Art of Abstraction - Computerphile](https://www.youtube.com/watch?v=p7nGcY73epw)

[(Links to an external site.)](https://www.youtube.com/watch?v=p7nGcY73epw)

[](https://www.youtube.com/watch?v=p7nGcY73epw)

32) An example of an abstraction used in the video is, "A transistor is a type of \_\_\_"?

33) Which video was the most interesting or your favorite?