1 Complete the sentences for a colour monitor. Use these words.

black blue cluster green pixels red white yellow

Each of the three _____ in each _____ on the screen has a different colour: _____, _____ and _____. When none of the pixels are on, the perceived colour is _____, and when they are all on it is _____ . Other colours, such as _____, are made by having two pixels on at the same time.

2 Do calculations to complete the table.

number of intensity levels	binary word length
12	4 bits
6	
	8 bits
100	
	5 bits

3 Link each **term** for a DAC to its **meaning**.

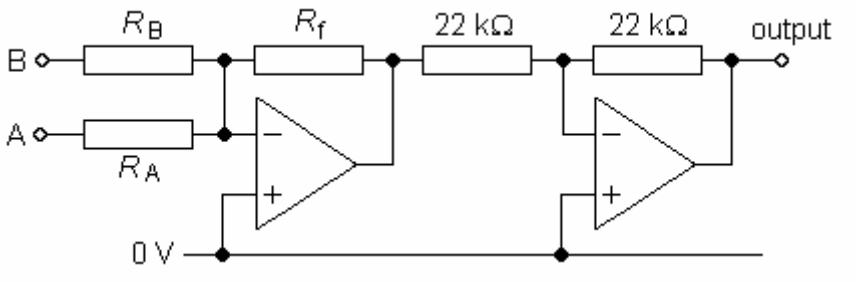
term
lsb
msb
range
levels
resolution
word length

meaning
number of digital inputs
represents one in the binary word
number of different possible output signals
change of output voltage when only lsb changes
changing only this bit alters output by half the range
difference between maximum and minimum output voltage

4 Do calculations to complete this table for some DACs.

word length	resolution	levels	range
3 bits	0.25 V	8	1.75 V
		64	5.0 V
12 bit	2.0 mV		
8 bit			255 mV
	100 mV		3.1 V

5 Do calculations to complete the table for this DAC.



R_A	R_B	R_f	output range
100 kΩ			3.0 V
	200 kΩ	160 kΩ	
500 kΩ		100 kΩ	
		50 kΩ	900 mV

6 Here are some statements about video signals. Which of them are true?

Digital transmission increases the bandwidth required.
Noise picked up in analogue transmission cannot be removed.
Compression reduces the chances of picking up noise during transfer.
The signal with the highest frequency component alternates high and low.
Digital transmission allows much more information to be transferred.
Separate analogue video signals reduces bandwidth required.
The bandwidth can be reduced by sending less information.

7 Do calculations to complete this table for digital video systems.

levels per pixel	clusters per line	lines per frame	frame refresh rate	video bit rate	video bandwidth
8	342	256	42 Hz		
	700	500	70 Hz		148 MHz
52		412	50 Hz	5 883 360	
	1000	800			60 MHz