Hexadecimal examples

- 1. What is the following color: FFFFF?
- 2. What is the following color: 000000?
- 3. What is the following color: FF0000?
- 4. What is the following color: FF00FF?
- 5. What is the following color: CCCCC?
- 6. What is the hexadecimal representation of the RGB color 133, 133, 0?
- 7. What is the hexadecimal representation of the RGB color 105, 51, 2?
- 8. What is the hexadecimal representation of the RGB color 25, 43, 15?
- 9. Is the RGB color 44, 90, 135 a browser-safe color?
- 10. Is the RGB color 0, 51, 153 a browser-safe color?
- 11. Is the RGB color 102, 153, 202 a browser-safe color?
- 12. Is the RGB color 102, 153, 207 a browser-safe color?

Bandwidth examples

- 1. How long will it take to download a file that is 135 KB using a 14.4 modem?
- 2. How long will it take to download a file that is 1.2 MB using a 56k modem?
- 3. How long will it take to download a file that is 5.65 MB using a fast Ethernet connection at 10mbps?
- 4. How long will it take to download a file that is 4.25 MB using a DSL connection at 188 KBps?

File size examples

- 1. How large will a graphic file be if it is 3" x 4" at 24-bit, 72 DPI?
- 2. How large will a graphic file be if it is 1" x 2" at 24-bit, 150 DPI?
- 3. How large will a graphic file be if it is 244 pixels by 314 at 8-bit, 72 DPI?
- 4. How large will a graphic file be if it is 640 pixels by 480 at 24-bit, 150 DPI?

Bit rate examples

- 1. What is the bit rate of a sound file that is 5 seconds long and has a file size of 98 KB? Would it play smoothly over a 14.4 modem?
- 2. What is the bit rate of a sound file that is 30 seconds long and has a file size of 333 KB? Would it play smoothly over a DSL connection at 188 KBps?
- 3. What is the bit rate of a video clip that is 1900KB and 40 seconds long? Would it play smoothly over a DSL connection at 188 KBps?

Answers

Hexadecimal Questions

1.	What is the following color: FFFFF?	White (RGB: 255, 255, 255)
2.	What is the following color: 000000?	Black (RGB: 0, 0, 0)
3.	What is the following color: FF0000?	Red (RGB: 255, 0, 0)
4.	What is the following color: FF00FF? Remember:	Magenta (RGB: 255, 0, 255) Red+Blue=Magenta Red+Green=Yellow
		Blue+Green–Cyan

6. What is the hexadecimal representation of the RGB color 133, 133, 0?

8		
16)133 R5	Dec $8 = \text{Hex } 8$	Answer: #858500
	Dec $5 = \text{Hex } 5$	

7. What is the hexadecimal representation of the RGB color 105, 51, 2?

$\frac{6}{16)105} \text{ R9}$	$16\overline{)51}R3$	$16)\overline{2}R2$
Dec 6 = Hex 6	Dec 3 = Hex 3	Dec $0 = \text{Hex } 0$
Dec 9 = Hex 9	Dec 3 = Hex 3	Dec $2 = \text{Hex } 2$

Answer: #693302

8. What is the hexadecimal representation of the RGB color 214, 172, 13?

$16)\overline{214} \text{ R6}$	$16\overline{)172} R12$	$16\overline{)13}$ R13
Dec 13 = Hex D	Dec 10 = Hex A	Dec 0 = Hex 0
Dec 6 = Hex 6	Dec 12 = Hex C	Dec 13 = Hex D

Answer: #D6AC0D

9. Is the RGB color 44, 90, 135 a browser-safe color?

$$16)\frac{2}{44}R12 16)90R10 16)135R7$$

Dec 2 = Hex 2Dec 5 = Hex 5Dec 8 = Hex 8Dec 12 = Hex CDec 10 = Hex ADec 7 = Hex 7

Answer: The hex representation is #2C5A87. Browser-safe hex representations can only include combinations of 00, 33, 66, 99, CC, and FF. Thus this color is not a browser-safe color.

10. Is the RGB color 0, 51, 153 a browser-safe color?

$16\overline{)0}$ R0	$16\overline{)51}R3$	$16\overline{)153} \mathrm{R9}$
Dec 0 = Hex 0 $Dec 0 = Hex 0$	Dec 3 = Hex 3 Dec 3 = Hex 3	Dec 9 = Hex 9 Dec 9 = Hex 9

Answer: The hex representation is #003399. Browser-safe hex representations include combinations of 00, 33, 66, 99, CC, and FF. Thus this color is a browser-safe color.

11. Is the RGB color 102, 153, 202 a browser-safe color?

$16\overline{\big)102}\mathrm{R}6$	$16\overline{)153} \mathrm{R9}$	$16)\overline{202}R10$
Dec 6 = Hex 6	Dec 9 = Hex 9	Dec $12 = \text{Hex C}$
Dec 6 = Hex 6	Dec 9 = Hex 9	Dec $10 = \text{Hex A}$

Answer: The hex representation is #6699CA. Browser-safe hex representations can only include combinations of 00, 33, 66, 99, CC, and FF. Thus this color is not a browser-safe color.

12. Is the RGB color 102, 153, 207 a browser-safe color?

$16\overline{)102}$ R6	$16\overline{)153}\mathrm{R9}$	$16)\overline{207} R15$
Dec 6 = Hex 6	Dec $9 = \text{Hex } 9$	Dec $12 = \text{Hex C}$
Dec 6 = Hex 6	Dec $9 = \text{Hex } 9$	Dec $10 = \text{Hex F}$

Answer: The hex representation is #6699CF. Browser-safe hex representations can only include combinations of 00, 33, 66, 99, CC, and FF. Thus this color is not a browser-safe color.

Bandwidth Questions

1. How long will it take to download a file that is 135 KB using a 14.4 modem?

Find data rate of modem: 14.4 kbps / 8 = 1.8 KBps

Calc download: 135 KB / 1.8 KBps = 75 seconds => 1.25 minutes

2. How long will it take to download a file that is 1.2 MB using a 56k modem?

Convert file size to KB: 1.2 MB * 1024 = 1228.8 KB file

Find data rate of device: 56 kbps / 8 = 7 KBps data rate

Calc download: 1228.8 KB / 7 KBps = 175.543 seconds => 2.92 minutes

3. How long will it take to download a file that is 5.65 MB using a fast Ethernet connection at 10mbps?

Deal with MB (since rate and size are in mb and MB):

Find device rate: 10 mbps / 8 = 1.25 MBps

Calc download: 5.65 MB / 1.25 MBps = 4.52 seconds

Alternate: Deal with KB

Find device rate: 1.25 MBps * 1024 = 1280 KBps

Find file size: 5.65 MB * 1024 = 5785.6 KB

Calc download: 5785.6 KB / 1280 KBps = 4.52 seconds 4. How long will it take to download a file that is 4.25 MB using a DSL connection at 188 KBps?

File size: 4.25 MB * 1024 = 4352 KB

Deice rate: Already in KB: 188 KBps

Find data rate: 4352 KB / 188 KBps = 23.149 seconds => .386 seconds

File size questions

1. How large will a graphic file be if it is 3" x 4" at 24-bit, 72 DPI?

72² x 3" x 4" x 24 / 8192 = 7.59 KB

2. How large will a graphic file be if it is 1" x 2" at 24-bit, 150 DPI?

150² x 1" x 2" x 24 / 8192 = 131.84 KB

3. How large will a graphic file be if it is 244 pixels by 314 at 8-bit, 72 DPI?

Convert pixels to inches (divide measurement by DPI):

244 / 72 = 3.389"

314 / 72 = 4.362"

File size:

72² x 3.389" x 4.362" x 8 / 8192 = 74.838 KB

4. How large will a graphic file be if it is 640 pixels by 480 at 24-bit, 150 DPI?

Convert pixels to inches (divide measurements by DPI):

640 / 150 = 4.267"

480 / 150 = 3.2"

File size:

Bit rate Questions

1. What is the bit rate of a sound file that is 5 seconds long and has a file size of 98 KB? Would it play smoothly over a 14.4 modem?

Calc bit rate (file size / length):

98 KB / 5 seconds = 19.6 KBps

Calc device data rate:

14.4 / 8 = 1.8 KBps

Answer: Absolutely not!

2. What is the bit rate of a sound file that is 30 seconds long and has a file size of 333 KB? Would it play smoothly over a DSL connection at 188 KBps?

Calc bit rate:

333 KB / 30 seconds = 11.1 KBps

Calc device data rate:

Already in KB: 188 KBps

Answer: Definitely.

3. What is the bit rate of a video clip that is 1900KB and 40 seconds long? Would it play smoothly over a DSL connection at 188 KBps?

Calc bit rate:

1900 KB / 40 seconds = 47.5 KBps

Answer: Yes.