

HW 1

- 1.
- a. between 1111 & 0000
- b. between 1000 & 0111

- 3.
- a. $1 \cdot 2^6 + 0 \cdot 2^5 + 1 \cdot 2^4 + 1 \cdot 2^3 + 0 \cdot 2^2 + 1 \cdot 2^1 + 1 \cdot 2^0 = 45$
- b. $11 \cdot 16^3 + 14 \cdot 16^2 + 14 \cdot 16^1 + 15 \cdot 16^0 = 48879$

- 5.
- a. $0.9 \cdot 2 = 1.8$ $0.4 \cdot 2 = 0.8$
 $0.8 \cdot 2 = 1.6$ $0.8 \cdot 2 = 1.6$
 $0.6 \cdot 2 = 1.2$ $0.6 \cdot 2 = 1.2$
 $0.2 \cdot 2 = 0.4$ $0.2 \cdot 2 = 0.4$
 $(0.11100110...)_{21}$

- b. $0.9 \cdot 16 = 14.4$
 $0.4 \cdot 16 = 6.4$
 $0.4 \cdot 16 = 6.4$
 $0.4 \cdot 16 = 6.4$
 $(0.E666...)_{16}$

- 7.
- a. 85
- b. -86
- c. -7.9375
- d. -6.625
- e. 7.875

- 9.
- a. 10101011
- b. 1010110
- c. 0111.1111
- d. 0110.1010
- e. 1000.0010

11. +31 to -32

13. if it's unsigned

- 15.
- a. 0.48104956268221574344
- b. 1111
- c. 0.22022...
- d. 10.5214...
- e. 26.285714...
- f. 50.1254

17. $\frac{2^5 + 2^3 + 2^1}{2^8} = \frac{42}{256} = 0.1640625$