

Name _____

Worksheet: Resistor Color Code

Many electrical components use some form of color coding scheme to indicate their value. Probably the most common electrical color code is the one that indicates the *nominal* value of resistors. In this exercise you will practice “reading” and converting resistor color codes to their numeric equivalent and vice-versa.

1) For each set of color bands, indicate the nominal resistance value based on the first three colors of the color code and then use the fourth (tolerance) band to determine the minimum and maximum value of each.

2) In the problems where the numerical values are given, work “backwards” to determine the color code. In general, use the closest favored metric abbreviation to report your answer.

Tolerances: Red = 2%; Gold = 5%; Silver = 10%; No fourth band = 20%.

Color Bands	Nominal Resistance Value	Minimum Value	Maximum Value
<i>Example:</i> <i>Red, Blue, Red, Gold</i>	2.60k Ω	2.47k Ω	2.73k Ω
1. Red, Yellow, Red	2.4k	1.920k	2.880k
2. Brown, Blue, Orange	16k	12.8 k	19.2 k
3. Green, red, brown	520 Ω	416 Ω	624 Ω
4. Gray, Green, Black, Gold	85	80.75	89.25
5. Blue, Brown, red, silver	6.1 k Ω	5.49 k Ω	6.71 k Ω
6. Green, Red, Black	52	41.6	62.4
7. Red, Blue, Blue	26M	20.8M	31.2M
8. Brown, Brown, Brown	110	88	132
9. Brown, Red, Purple	120 M Ω	96 M Ω	144 M Ω
10. Violet, Gray, Red, Gold	7.8 k	7.41 k	8.19 k
11. Yellow, Orange, Black	43	34.4	51.6
12. Blue, Grey, red	6.8 k Ω	5.44 k Ω	8.16 k Ω
13. Green, Violet, Orange	57k	45.6k	68.4k
14. Blue, Red, Orange, Gold	62k	58.9k	65.1k
15. Yellow, Brown, Red	4.1k	3.28k	4.92k
16. Brown, Black, Black, Gold	10 Ω	9.5 Ω	10.5 Ω
17. Brown, Red, Green	1.2M	960k	1.44M
18. Gray, Blue, Red	8.6k	6.88k	10.32k
19. Red, Brown, Gray, Gold	2.1G	1.995k	2.205k
20. Purple, Red, Brown, Silver	720 Ω	648 Ω	792 Ω