

Resistors in Series and Parallel

For questions 1 to 10 below, calculate the combined total resistance of the resistors given:

Assume that all resistors have a tolerance of $\pm 5\%$ and therefore give all answers to **2 significant figures**

Question 1

220 Ω and 100 Ω in series

- A. 320 Ω
- B. 220 Ω
- C. 120 Ω
- D. 100 Ω

Question 2

470 Ω and 820 Ω in series

- A. 470 Ω
- B. 820 Ω
- C. 1290 Ω
- D. 1300 Ω

Question 3

330 Ω and 1k2 Ω in series

- A. 432 Ω
- B. 1500 Ω
- C. 1530 Ω
- D. 3960 Ω

Question 4

12k Ω and 1k2 Ω in series

- A. 12,000 Ω
- B. 13,000 Ω
- C. 13,200 Ω
- D. 24,000 Ω

Question 5

A pair of $100\ \Omega$ resistors in series

- A. $50\ \Omega$
- B. $100\ \Omega$
- C. $150\ \Omega$
- D. $200\ \Omega$

Question 6

Three $100\ \Omega$ resistors in series

- A. $33\ \Omega$
- B. $200\ \Omega$
- C. $300\ \Omega$
- D. $3\text{k}\Omega$

Question 7

$470\ \Omega$ and $820\ \Omega$ in parallel

- A. $300\ \Omega$
- B. $470\ \Omega$
- C. $820\ \Omega$
- D. $1290\ \Omega$

Question 8

$150\ \Omega$ and $1\text{k}5\ \Omega$ in parallel

- A. $75\ \Omega$
- B. $140\ \Omega$
- C. $150\ \Omega$
- D. $1500\ \Omega$

Question 9

A pair of $180\ \Omega$ resistors in parallel

- A. $90\ \Omega$
- B. $180\ \Omega$
- C. $280\ \Omega$
- D. $360\ \Omega$

Question 10

Three $470\ \Omega$ resistors in parallel

- A. $160\ \Omega$
- B. $240\ \Omega$
- C. $470\ \Omega$
- D. $1400\ \Omega$

Question 11

What value resistor needs to be added in series to a $910\ \Omega$ resistor to make the equivalent of a $1\text{k}3\ \Omega$ resistor?

- A. $90\ \Omega$
- B. $300\ \Omega$
- C. $390\ \Omega$
- D. $1090\ \Omega$

Question 12

What value resistor needs to be added in parallel to a $910\ \Omega$ resistor to make the equivalent of a $420\ \Omega$ resistor?

- A. $490\ \Omega$
- B. $670\ \Omega$
- C. $780\ \Omega$
- D. $1300\ \Omega$

Answers

1. A
2. D The answer is $1290\ \Omega$ which is $1300\ \Omega$ to 2 significant figures
3. B The answer is $1530\ \Omega$ which is $1500\ \Omega$ to 2 significant figures
4. B The answer is $132000\ \Omega$ which is $13000\ \Omega$ to 2 significant figures
5. D
6. C
7. A
8. B
9. A
10. A
11. C
12. C

Website

http://www.pfnicholls.com/Electronics_Resources/QuestionIndex.html

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