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| **Physics 30 - Lesson 18A**checkmark |
| 1)/3 |  | checkmarkcheckmark |
| 2)/4 | a)b) | checkmarkcheckmarkcheckmarkcheckmark |
| 3)/5 | a) | checkmark |
| b) | checkmark |
| c) |  4 9 12checkmark |  checkmark checkmarkcheckmark |
| 4)/3 | checkmark | checkmark |
| 5)/4 | checkmarkBeforecheckmark | Aftercheckmarkcheckmark |
| 6)/5 | R­1 R­2 - radio 10V | checkmarkcheckmarkcheckmarkcheckmarkcheckmark |
| 7) a)/5 | 673Acheckmark constant | checkmarkcheckmarkcheckmarkcheckmark |
| 7) b)/5  | 673Bcheckmark | checkmarkcheckmarkcheckmarkcheckmark |

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| 7) c)/12 | 674A | checkmarkcheckmarkcheckmark |
| checkmarkcheckmarkcheckmarkcheckmark | checkmarkcheckmarkcheckmarkcheckmarkcheckmark |
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| 7) d)/5 | 674Bcheckmarkcheckmarkcheckmarkcheckmark | checkmarkcheckmarkcheckmarkcheckmarkcheckmarkcheckmark |
| 7) e)/6 | 674Ccheckmarkcheckmark | checkmarkcheckmarkcheckmarkcheckmarkcheckmarkcheckmarkcheckmarkcheckmark | checkmarkcheckmark |
| 8)/3/6 | i) | checkmarkcheckmarkcheckmarkcheckmarkcheckmarkcheckmark |
| ii) redraw the circuit to see what is series and what is parallel2.004.0010.06.005.003.008.00A B |
| checkmarkcheckmarkcheckmarkcheckmarkcheckmarkcheckmarkcheckmarkcheckmark | checkmarkcheckmarkcheckmarkcheckmark |

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| 10)/5 | checkmarkcheckmark | checkmarkcheckmarkcheckmarkcheckmarkcheckmarkcheckmarkcheckmarkcheckmark |
| 11)/5 | checkmarkcheckmarkcheckmarkcheckmarkcheckmarkcheckmark | checkmarkcheckmarkcheckmarkcheckmark |
| 12)/4 | checkmarkcheckmarkcheckmarkcheckmark | checkmarkcheckmarkcheckmarkcheckmark |

13)

2 each

A. If X is open, no current can flow into the circuit. No lights are on.

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B. With X and Z closed, all of the lights are on.

C. With X closed and Z open the two lights in the middle are on, while the light in series with Z is off.

D. When switch Y is closed it acts to “short” the circuit, i.e. the current bypasses all the lights since the current flows through the path of least resistance. Therefore, none of the lights are on.