Worksheet 3

Name Class Date

**1** Balance the following equations showing incomplete combustion.  
Numbers do not necessarily need to go in each space.

**a** \_\_\_\_C2H6  \_\_\_\_O2 → \_\_\_\_C  \_\_\_\_CO  \_\_\_\_H2O

**b** \_\_\_\_C4H8  \_\_\_\_O2 → \_\_\_\_C  \_\_\_\_CO  \_\_\_\_H2O

**2** Complete the section below about the incomplete combustion of gasoline (petrol).

Fill in the gaps using the correct answers.

If gasoline is burned in a limited supply of oxygen or air, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ combustion occurs producing carbon and carbon \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

It is possible to tell that carbon is being released by seeing the release of smoke and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. This can cause:

* blackened \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* blocked chimneys and flues
* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ problems
* global dimming.

Carbon monoxide is produced as the carbon atoms from the gasoline are only partially \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. Electronic carbon monoxide \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ are needed near gas appliances because we cannot see or \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ carbon monoxide. We need to know if carbon monoxide is being produced as it can cause unconsciousness and even \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. This happens because as carbon monoxide is breathed in, it gets into the bloodstream and combines with \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ in the red blood cells. This reduces the amount of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ carried in the blood.

**3** Complete the following sentences by underlining the correct words in each *pair*.

**a Incomplete** **combustion** happens if the supply of air is *plentiful* | *limited*.

**b Carbon monoxide** is formed during *complete* | *incomplete* **combustion** of hydrocarbon fuels.

**c** Compared to **complete** **combustion**, *more* | *less* energy is released during incomplete combustion.

**4** Carbon particles are released during the incomplete combustion of hydrocarbon fuels. Complete the table by placing a tick (✓) in each box that correctly describes a problem caused by carbon particles.

|  |  |
| --- | --- |
| Possible problem | Caused by carbon particles (✓) |
| smoke and soot formed |  |
| surfaces become damp |  |
| surfaces become black or dirty |  |
| enhanced greenhouse effect |  |
| may cause breathing problems |  |
| flue pipes from boilers get blocked |  |