**Climate figures**

Find each of the following figures and identify any other figures that are used to calculate them. The first one has been done for you:

|  |  |
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| **Temperature** | |
| **Figure** | mean surface temperature of the earth in 2019 |
| **Value** | 0.88°C |
| **Calculation** | This can be calculated using the energy balance model, which uses the following values: solar radiation, solar constant, Earth's bond albedo, Stefan-Boltzmann constant |
| **Sources** | <https://plus.maths.org/content/climate-modelling-made-easy> |

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| **Figure** | difference between the mean surface temperature of the earth in 2019 and the pre-industrial mean surface temperature of the earth (1850-1900) |
| **Value** |  |
| **Calculation** |  |
| **Sources** |  |

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| **Figure** | difference between the mean surface temperature of the earth in 2100 and the pre-industrial mean surface temperature of the earth aimed at by the Paris Agreement |
| **Value** |  |
| **Calculation** |  |
| **Sources** |  |

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| **Figure** | Australia’s hottest year since 1910 |
| **Value** |  |
| **Calculation** |  |
| **Sources** |  |

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| --- | --- |
| **Figure** | Australia’s driest year since 1900 |
| **Value** |  |
| **Calculation** |  |
| **Sources** |  |

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| **Carbon emissions** | |
| **Figure** | global CO2 emissions from 2006 to 2016 as a percentage of global CO2 emissions from 1900 to 1910 |
| **Value** |  |
| **Calculation** |  |
| **Sources** |  |

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| --- | --- |
| **Figure** | Australian CO2 emissions from 2006 to 2016 as a percentage of global CO2 emissions for the same time period |
| **Value** |  |
| **Calculation** |  |
| **Sources** |  |

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| --- | --- |
| **Figure** | Australian population in 2016 as a percentage of global population in the same year |
| **Value** |  |
| **Calculation** |  |
| **Sources** |  |

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| --- | --- |
| **Figure** | Australian CO2 emissions per capita in 2018 |
| **Value** |  |
| **Calculation** |  |
| **Sources** |  |

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| --- | --- |
| **Figure** | Australia’s total CO2 emissions in 2017 |
| **Value** |  |
| **Calculation** | Write an equation showing how each sector’s emissions contribution adds up to Australia’s total CO2 emissions in 2017:  % of emissions for sector a + % of emissions for sector b and so on = 100% of Australia’s total CO2 emissions in 2017 |
| **Sources** | [Climate Council: Australia’s rising greenhouse gas emissions](https://www.climatecouncil.org.au/wp-content/uploads/2018/06/CC_MVSA0143-Briefing-Paper-Australias-Rising-Emissions_V8-FA_Low-Res_Single-Pages3.pdf) |

|  |  |
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| **Figure** | number of years since global mean atmospheric CO2 concentration reached 2018 levels |
| **Value** |  |
| **Calculation** |  |
| **Sources** |  |

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| --- | --- |
| **Extreme weather events** | |
| **Figure** | increase in global frequency of hydrological extreme weather events (e.g. floods) in 2016 as a proportion of global frequency of hydrological extreme weather events in 1980 |
| **Value** |  |
| **Calculation** |  |
| **Sources** | [Extreme weather events in Europe: preparing for climate change adaptation](https://easac.eu/fileadmin/PDF_s/reports_statements/Extreme_Weather/EASAC_Statement_Extreme_Weather_Events_March_2018_FINAL.pdf) |