Combining Compound Measures GREEN

1. 110 g of copper is mixed with 90 g of zinc to make brass for a bracelet.

The density of copper is 9 g/cm3.

The density of zinc is 7 g/cm3.

What is the density of the brass bracelet? Give your answer correct to 1 decimal place.

2. The density of fruit syrup is 1.38 g/cm3.

The density of water is 1.00 g/cm3.

30 cm3 of fruit syrup is mixed with 200 cm3 of water to make a drink with a volume of 230 cm3.

Work out the density of the drink. Give your answer correct to 2 decimal places.

3. Amir drives 60 km from Peterborough to Leicester.

 He drives the first 40 km at an average speed of 60 km/h.

From this point it takes Amir 24 minutes to complete his journey.

What was Amir’s average speed for the whole journey?

4. A bronze statue has a mass of 3 kg. 360 g of tin is mixed with copper to make the bronze for the statue.

The density of copper is 9.0 g/cm3.

The density of tin is 7.3 g/cm3.

What is the density of the statue? Give your answer correct to 1 decimal place.

5. Jodie drives for 24 minutes at a speed of 50 km/h.

 She drives at 60 km/h for the next 30 km.

 For the last 15 minutes she has to drive at 40 km/h.

What was Jodie’s average speed for the whole journey? Give your answer correct to 2 decimal places.

6. Solder is made of 63% tin and 37% lead.

 The density of tin is 7.26 g/cm3.

 The density of lead is 11.3 g/cm3.

 A piece of solder wire has a diameter of 1.6 mm and is 20 cm long.

Calculate the mass of the piece of solder wire. Give your answer correct to 3 significant figures.

Combining Compound Measures AMBER

1. 110 g of copper is mixed with 90 g of zinc to make brass for a bracelet.

The density of copper is 9 g/cm3.

The density of zinc is 7 g/cm3.

What is the density of the brass bracelet? Give your answer correct to 1 decimal place.

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Copper** | **Zinc** | **Brass** |
| **Mass** |  |  |  |
| **Volume** |  |  |  |
| **Density** |  |  |  |

2. The density of fruit syrup is 1.38 g/cm3.

The density of water is 1.00 g/cm3.

30 cm3 of fruit syrup is mixed with 200 cm3 of water to make a drink with a volume of 230 cm3.

Work out the density of the drink. Give your answer correct to 2 decimal places.

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Water** | **Syrup** | **Total** |
| **Mass** |  |  |  |
| **Volume** |  |  |  |
| **Density** |  |  |  |

3. Amir drives 60 km from Peterborough to Leicester.

 He drives the first 40 km at an average speed of 60 km/h.

From this point it takes Amir 24 minutes to complete his journey.

What was Amir’s average speed for the whole journey?

|  |  |  |  |
| --- | --- | --- | --- |
|  | **1st leg** | **2nd leg** | **Total** |
| **Distance** |  |  |  |
| **Time** |  |  |  |
| **Speed** |  |  |  |

4. A bronze statue has a mass of 3 kg. 360 g of tin is mixed with copper to make the bronze for the statue.

The density of copper is 9.0 g/cm3.

The density of tin is 7.3 g/cm3.

What is the density of the statue? Give your answer correct to 1 decimal place.

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Tin** | **Copper** | **Bronze** |
| **Mass** |  |  |  |
| **Volume** |  |  |  |
| **Density** |  |  |  |

5. Jodie drives for 24 minutes at a speed of 50 km/h.

 She drives at 60 km/h for the next 30 km.

 For the last 15 minutes she has to drive at 40 km/h.

What was Jodie’s average speed for the whole journey? Give your answer correct to 2 decimal places.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **1st leg** | **2nd leg** | **3rd leg** | **Total** |
| **Distance** |  |  |  |  |
| **Time** |  |  |  |  |
| **Speed** |  |  |  |  |

6. Solder is made of 63% tin and 37% lead.

 The density of tin is 7.26 g/cm3.

 The density of lead is 11.3 g/cm3.

 A piece of solder wire has a diameter of 1.6 mm and is 20 cm long.

Calculate the mass of the piece of solder wire. Give your answer correct to 3 significant figures.

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Tin** | **Lead** | **Solder** |
| **Mass** |  |  |  |
| **Volume** |  |  |  |
| **Density** |  |  |  |

Hint: Volume of a cylinder = $πr^{2}h$

Combining Compound Measures RED

1. 110 g of copper is mixed with 90 g of zinc to make brass for a bracelet.

The density of copper is 9 g/cm3.

The density of zinc is 7 g/cm3.

What is the density of the brass bracelet? Give your answer correct to 1 decimal place.

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Copper** | **Zinc** | **Brass** |
| **Mass** | 110 g | 90 g |  |
| **Volume** |  |  |  |
| **Density** | 9 g/cm3 | 7 g/cm3 |  |

2. The density of fruit syrup is 1.38 g/cm3.

The density of water is 1.00 g/cm3.

30 cm3 of fruit syrup is mixed with 200 cm3 of water to make a drink with a volume of 230 cm3.

Work out the density of the drink. Give your answer correct to 2 decimal places.

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Water** | **Syrup** | **Total** |
| **Mass** |  |  |  |
| **Volume** | 200 cm3  | 30 cm3 | 230 cm3 |
| **Density** | 1.00 g/cm3 | 1.38 g/cm3 |  |

3. Amir drives 60 km from Peterborough to Leicester.

 He drives the first 40 km at an average speed of 60 km/h.

From this point it takes Amir 24 minutes to complete his journey.

What was Amir’s average speed for the whole journey?

|  |  |  |  |
| --- | --- | --- | --- |
|  | **1st leg** | **2nd leg** | **Total** |
| **Distance** |  |  | 60 km |
| **Time** |  |  |  |
| **Speed** |  |  |  |

4. A bronze statue has a mass of 3 kg. 360 g of tin is mixed with copper to make the bronze for the statue.

The density of copper is 9.0 g/cm3.

The density of tin is 7.3 g/cm3.

What is the density of the statue? Give your answer correct to 1 decimal place.

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Tin** | **Copper** | **Bronze** |
| **Mass** |  |  |  |
| **Volume** |  |  |  |
| **Density** |  |  |  |

5. Jodie drives for 24 minutes at a speed of 50 km/h.

 She drives at 60 km/h for the next 30 km.

 For the last 15 minutes she has to drive at 40 km/h.

What was Jodie’s average speed for the whole journey? Give your answer correct to 2 decimal places.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **1st leg** | **2nd leg** | **3rd leg** | **Total** |
| **Distance** |  |  |  |  |
| **Time** |  |  |  |  |
| **Speed** |  |  |  |  |

6. Solder is made of 63% tin and 37% lead.

 The density of tin is 7.26 g/cm3.

 The density of lead is 11.3 g/cm3.

 A piece of solder wire has a diameter of 1.6 mm and is 20 cm long.

Calculate the mass of the piece of solder wire. Give your answer correct to 3 significant figures.

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Tin** | **Lead** | **Solder** |
| **Mass** |  |  |  |
| **Volume** |  |  |  |
| **Density** |  |  |  |

Hint: Volume of a cylinder = $πr^{2}h$, where $r$ is the radius and $h$ is the height