## IRELAND'S FACTS AND FIGURES $\mathbf{2019}$ SOLUTION PACK

## ABOUT

This activity pack was designed to accompany the Ireland's Facts and Figures 2019 Booklet created by the CSO, exploring their data through questions on percentages and charts and graphs.



Ireland's Facts & Figures 2019

#### Table of Contents

1. Population	9. ICT Usage
2. Life Events	10. Business in Ireland
3. Marriages and Deaths	11. Housing
4. Employment & Unemployment	12. Economy and Trade
5. Health	13. Earnings
6. Environment	14. Tourism
7. Equality & Discrimination	15. Transport
8. Education	16. Agriculture

## POPULATION

SECTION I

Question 1

### POPULATION

Use the population figures to calculate, correct to 2 decimal places:

- (i) The percentage of the population of Ireland that was male in 2019
- (ii) The percentage of the population of Ireland that was **female** in 2019

00 MALES 2,438

 $\frac{2,438,000}{4,921,500} \times 100 = 49.54\%$ 



 $\frac{2,483,500}{4,921,500} \times 100 = 50.46\%$ 

Section I : QI

### POPULATION

Create a Pie Chart to represent the proportions of the population of Ireland in 2019 that were Irish Nationals and Non-Irish Nationals.

Category	Population	Percentage	Degrees
Irish Nationals	4,298,800	87.3%	314.28°
Irish Non Nationals	622,700	12.7%	45.72°

Nationals vs Non Nationals



87.3% Irish Nationals (4,298,800)



#### Irish Nationals $360 \times 87.3\% = 314.28^{\circ}$

Irish Nationals

**Irish Non Nationals** 360 × 87.3% = 45.72° Section I : Q2

## LIFE EVENTS

SECTION 2

#### BIRTHS

How many fewer registered births were there in 2018 than in 2008? Does this figure mean that the population of Ireland fell in the 10-year period from 2008 to 2018? Discuss..

There were 61,016 births registered in 2018, 31,298 male births and 29,718 female births.



The 2018 total is **18.8**%\* lower than 2008 when **75,173** births were registered.

Calculate the difference between births in 2008 and 2018.

75,173 - 60,016 = 15,157

Even though the number of births fell from 2008 to 2018 we cannot say that the population fell as there are many other factors including deaths, migration etc

Section 2:QI

## MARRIAGES & DEATHS

**SECTION 3** 

Question 1

Question 2

What was the total number of people who got married in 2018?

Section 3 : QI



There were 20,389 opposite-sex marriages in 2018. There were 664 same-sex marriages in 2018, of which 372 were male unions and 292 were female unions.

First calculate the TOTAL marriages in 2018.

20,389 + 664 = 21053

We must multiply this by 2...as there are 2 people in each marriage.

 $21053 \times 2 = 42106$ 

42,106 people got married in 2018

Create a suitable chart to illustrate the distribution of opposite sex and same sex marriages in 2018.

Category	Number
Opposite Sex	20,389
Same Sex	664





Create a suitable chart to illustrate the distribution of opposite sex and same sex marriages in 2018.

Category	Number	Degrees
Opposite Sex	20,389	348.65°
Same Sex	664	11.35°



First calculate the TOTAL marriages in 2018.

20,389 + 664 = 21053

**Opposite Sex**  $\frac{20389}{21053} \times 360 = 348.65^{\circ}$ 

#### Same Sex

 $\frac{664}{21053} \times 360 = 11.35^{\circ}$ 



Opposite Sex
Same Sex

Using the Registered Birth and Death Figures on pages 6 and 7 calculate the ratios of births to deaths in Ireland in 2018.

There were 61,016 births registered in 2018, 31,298 male births and 29,718 female births. There were 31,116 deaths registered in 2018, of these 15,967 were male while 15,149 were female.

Calculate how many births there were per each death in Ireland in 2018

Births	Ratio
Deaths	Birth
$=\frac{61016}{31116}$	1.96
= 1.96	

Ratio
<b>Births : Deaths</b>
1.96:1

## EMPLOYMENT & UNEMPLOYMENT

**SECTION 4** 

Question 1

### **EMPLOYMENT AND UNEMPLOYMENT**

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Using the estimated population of Ireland on page 5 and the figure for those unemployed in Q3, 2019, calculate the unemployment rate (those unemployed as a percentage of the population).

11.00

There were **128,000** persons **unemployed** in Quarter 3 2019.

Unemployment Rate  $\frac{\text{Unemployed}}{\text{Population}} \times 100$ 

 $\frac{\text{Unemployed}}{\text{Population}} \times 100$ 

 $=\frac{128,000}{4,921,500}\times100$ 



Section 4:QI

### **EMPLOYMENT AND UNEMPLOYMENT**

Using the figure on page 8 for the number of lone parent households in the state in Q3 in 2019, calculate how many households are in the state?

There were 239,500 or 12.6% lone parent households in the State.

239,500 = 12.6% $\frac{239,500}{12.6} \times 100 = 100\%$ 1,900,794 = 100%

There were approximately 1,900,794 households in Ireland in Q3 2019.



## HEALTH

**SECTION 5** 

Question 1

#### HEALTH

Use the information on page 9 to calculate the Ireland's Health Expenditure in 2012 and write your answer in digits rather than words, to the nearest euro.

Ireland's current health expenditure was **€21.1 billion** in 2017, an increase of 13% since 2012.

€21.1 Billion = 21,100,000,000

21,100,000,000 = 113%

 $\frac{21,100,000,000}{113} \times 100 = 100\%$ 

18,672,566,370 = 100%

#### Ireland's Health Expenditure in 2012 was approximately €18,672,566,370

#### HEALTH

Calculate the percentage increase in the number of GPs treating under the GMS scheme from 2013 to 2017, correct to 2 decimal places.

GMS patients were treated by 2,413 GPs in 2013. The number of GPs treating under the GMS scheme increased to 3,005 in 2017.

 $\frac{\text{Percentage Increase}}{\text{Original}} \times 100$ 

 $\frac{\text{Increase}}{\text{Original}} \times 100$ 

$$=\frac{3005-2413}{2413}\times100$$

$$=\frac{592}{2413} \times 100$$

= 24.53%



# ENVIRONMENT

**SECTION 6** 

Question 1

#### **ENVIRONMENT**

Use the figure given for yearly average rainfall to calculate the average rainfall in Ireland:

(i) Per month

(ii) Per day (assume a 365 day year)

The average rainfall figure in 2018 was

1,224 millimetres\*

Per Month

$$\frac{1,224}{12} = 102 \text{ mm}$$

#### Per Day

$$\frac{1,224}{365} = 3.35 \text{ mm}$$

Section 6:QI

#### **ENVIRONMENT**

Calculate the percentage decrease in the number of bus and coach passenger journeys from the period 2005 – 2009 to 2018, correct to two decimal places.

The number of public bus and coach passenger journeys in Ireland fell from an average annual 234.1 million in 2005-2009 to an average of 226.7 million in 2018.

 $\frac{\text{Percentage Decrease}}{\text{Original}} \times 100$ 

 $\frac{\text{Decrease}}{\text{Original}} \times 100$ 

$$=\frac{234.1-226.7}{234.1}\times100$$

$$=\frac{7.4}{234.1}\times 100$$

Section 6 : Q2

## EQUALITY & DISCRIMINATION

**SECTION 7** 

### **EQUALITY AND DISCRIMINATION**

Four statements are given on page 12. Explain why it is not possible to use a chart to compare the percentages given in those statements?

Whilst we are given a number of percentages, they are not percentages of the same number. For example

33.2% - This is 33.2% of those that identify as LGBTI+.

34.1% - This is 34.1% of those who experienced discrimination.

33.0% - This is 33% of those who experienced discrimination in the workplace.

13.1% - This is 13.1% of those who experienced discrimination in the workplace.



#### **SECTION 8**

Question 1

Question 2

Question 3

What percentage of 2016 graduates were in substantial employment in the first year after their graduation?

**FOUR IN FIVE** 2016 graduates in substantial — OU%0 employment in the first year after graduation.

$$=\frac{4}{5}\times100$$

Estimate the median yearly salary using the figures provided on page 13. Why do you think the median is given as a measure of the central tendency (measure of the average) instead of the mean?



The median is a good measure of the middle of a set of data that may have outliers.

Extreme values, such as unusually high salaries, do not affect the median as strongly as they do the mean.

Section 8 : Q2

Calculate the range in highest and lowest earnings.



Range = Highest – Lowest

625 - 355 = €270

Can we say that there were less people qualified in construction in 2016 than 2010? Explain your answer through the use of an example.

**20.1%** The share of apprentices who qualified in CONSTRUCTION in 2016, down from 48.6% in 2010.



We can't say this with certainty. Whilst the percentage is lower in 2016 we do not know the number of apprentices in each of the years. Take an extreme an example where there were 2000 apprentices in 2010 and 5000 apprentices in 2016. 20.1% of 5,000 is 1005 which is greater than 48.6% of 2000, which is 972.

# ICT USAGE

SECTION 9

### ICT USAGE

Using information on pages 8 and 15 estimate the number of households in Ireland without internet access.

There were 239,500 or 12.6% lone parent households in the State.

239,500 = 12.6% $\frac{239,500}{12.6} \times 100 = 100\%$ 1,900,794 = 100%



There were approximately 1,900,794 households in Ireland in Q3 2019.

If 91% of households HAVE the internet then 9% of household do NOT.

 $1,900,794 \times 0.09 = 171,071.46$ 

Approximately 171,071 households in Ireland did NOT have internet access in 2019.

## BUSINESS IN IRELAND

SECTION 10

Question 1

#### **BUSINESS IN IRELAND**

Create a Pie Chart to illustrate the Number of Enterprises by sector in 2017

Number of Enterprises by sector 2017



Total Enterprises 291,365

#### Services

 $\frac{158,574}{291,365} \times 360 = 195.93^{\circ}$ 

Section 10:Q1

#### Finance and Insurance $\frac{8,121}{291,365} \times 360 = 10.03^{\circ}$

#### Industry

 $\frac{18,817}{291,365} \times 360 = 23.25^{\circ}$ 

#### Construction

 $\frac{57,255}{291,365} \times 360 = 70.74^{\circ}$ 

## $\frac{\text{Distribution}}{48,598} \\ \frac{48,598}{291,365} \times 360 = 60.05^{\circ}$

#### **BUSINESS IN IRELAND**

Create a Pie Chart to illustrate the Number of Enterprises by sector in 2017



#### **Services**

 $\frac{158,574}{291,365} \times 360 = 195.93^{\circ}$ 

Section 10:QI

#### Finance and Insurance $\frac{8,121}{291,365} \times 360 = 10.03^{\circ}$

#### Industry

 $\frac{18,817}{291,365} \times 360 = 23.25^{\circ}$ 

## $\frac{\text{Construction}}{57,255} \times 360 = 70.74^{\circ}$

 $\frac{\text{Distribution}}{48,598} \times 360 = 60.05^{\circ}$ 

#### **BUSINESS IN IRELAND**

Compare the average number of employees per enterprise in the Services and Distribution sectors in 2017.

Number of Enterprises by sector 2017



 $\frac{774,572}{158,574} = 4.88$ 

## $\frac{367,405}{48,598} = 7.56$

On average there were 4.88 employees per enterprise in the Services sector compared to 7.56 employees per enterprise in the Distribution sector.

#### SECTION II

Question 1

Question 2

Create a suitable chart to illustrate the numbers of houses and apartments/flats granted planning permission from Q3 2018 to Q3 2019.

PERIOD	HOUSES	APTS/FLATS	TOTAL
Q3 2018	4,879	3,139	8,018
Q4 2018	4,376	2,306	6,682
Q1 2019	4,901	2,592	7,493
Q2 2019	4,936	4,675	9,611
Q3 2019	4,934	5,656	10,590

There was an overall increase of 32.1% in planning permissions granted for dwelling units between Q3 2018 and Q3 2019, which comprised of an **80.2% increase** in apartments and a **1.1% increase** in houses approved.

Create a suitable chart to illustrate the numbers of houses and apartments/flats granted planning permission from Q3 2018 to Q3 2019.



Planning Permissions Granted

There was an overall increase of 32.1% in planning permissions granted for dwelling units between Q3 2018 and Q3 2019, which comprised of an 80.2% increase in apartments and a 1.1% increase in houses approved. Use the chart below to confirm these figures.

PERIOD	HOUSES	APTS/FLATS	TOTAL
Q3 2018	4,879	3,139	8,018
Q4 2018	4,376	2,306	6,682
Q1 2019	4,901	2,592	7,493
Q2 2019	4,936	4,675	9,611
Q3 2019	4,934	5,656	10,590

 $\frac{\text{Percentage Increase}}{\text{Original}} \times 100$ 

#### **Apartments**

 $\frac{Increase}{Original} \times 100$ 

$$=\frac{5656-3139}{3139}\times100$$

$$=\frac{2517}{3139} \times 100$$

 $\approx 80.2\%$ 

There was an overall increase of 32.1% in planning permissions granted for dwelling units between Q3 2018 and Q3 2019, which comprised of an 80.2% increase in apartments and a 1.1% increase in houses approved. Use the chart below to confirm these figures.

PERIOD	HOUSES	APTS/FLATS	TOTAL
Q3 2018	4,879	3,139	8,018
Q4 2018	4,376	2,306	6,682
Q1 2019	4,901	2,592	7,493
Q2 2019	4,936	4,675	9,611
Q3 2019	4,934	5,656	10,590

 $\frac{\text{Percentage Increase}}{\text{Original}} \times 100$ 

#### Houses

 $\frac{Increase}{Original} \times 100$ 

$$=\frac{4934-4879}{4879}\times100$$

$$=\frac{55}{4879}\times100$$

 $\approx 1.1\%$ 

## ECONOMY AND TRADE

**SECTION 12** 

Question 1

Question 2

Question 3

**Question 4** 

Question 5

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### ECONOMY

Calculate the Gross Domestic Product (GDP) for 2017, correct to 3 significant figures.

**GROSS DOMESTIC PRODUCT** €321.4 BILLION 8.2% increase in GDP in 2018

€321.4 Billion = 321,400,000,000

321,400,000,000 = 108.2%

 $\frac{321,400,000,000}{108.2} \times 100 = 100\%$ 

297,042,513,900 = 100%

Ireland's GDP in 2017 was approximately €297,000,000,000 or €297 Billion





Section 12:QI

### **INTERNATIONAL ACCOUNTS**

The top three countries accounted for 38.7% of exports.

Calculate Ireland's total exports in 2018, correct to 4 significant figures.



## Total exports of top 3 countries.

Section 12:Q2

€73.1 billion + €51.3 billion €28.8 billion €153.2 billion

€153.2 Billion = 153,200,000,000

153,200,000,000 = 38.7%

 $\frac{153,200,000,000}{38.7} \times 100 = 100\%$ 

395,865,633,100 = 100%

Ireland's exports in 2018 amounted to €395,900,000,000 or €395.9 Billion

### TRADE

How many times greater was the value of goods exported in 2018 than the value of goods exported in 1975?

How many times greater was the value of goods imported in 2018 than the value of goods imported in 1975?

Between 1975 and 2018 the value of goods exported rose from €1,838 million to €140,808 million.

The value of imports between 1975 and 2018 rose from €2,164 million to €92,105 million.



 $\frac{140,808 \text{ million}}{1,838 \text{ million}} = 76.6$ 

 $\frac{92,105 \text{ million}}{2,164 \text{ million}} = 42.6$ 

#### TRADE

Confirm that the % increase in the cost of 1kg of Smoked Salmon from 2017 to 2018 is 7.5%.

	2017	2018		
Smoked salmon 1kg	€29.30	€31.49	7.5%	$\bigotimes$
Percentage IncreaseIncreaseOriginal $\times$ 100	$\frac{\text{Increase}}{\text{Original}} \times 100$ $= \frac{31.49 - 29.30}{29.30} \times 100$	L00		
	$=\frac{2.19}{29.30} \times 100$ = 7.47%			
	≈ 7.5%			

Section 12:Q4

#### TRADE

Confirm that the % decrease in the cost of 1kg of Fresh Hake from 2017 to 2018 is 2.1%.



Section 12:Q5

## EARNINGS

**SECTION 13** 

Question 1

#### EARNINGS

Calculate the range between the sectors with the highest and lowest average earnings.



Range

= Highest – Lowest

 $991.18 - 313.59 = \pounds 677.59$ 

Section 13:QI

#### EARNINGS

Calculate the difference between the median weekly earnings of females and males in Dublin as a percentage of the median weekly female earnings.

**Dublin Males** €714.67

**Dublin Females** 

Dublin Males
 
$$\frac{714.67 - 573}{573} \times 100$$

 € 714.67 - 573
 × 100

 Dublin Females
  $\frac{141.67}{573} \times 100$ 

 € 573.000
 = 24.72%

The median weekly earnings of males in Dublin is 24.72% higher than the median weekly earnings of females in Dublin.



Section 13:Q2

#### SECTION 14

Question 1

Question 2

Calculate the average spend per trip by Irish residents on holidays abroad.

In 2018, there were **5,155,000** outbound trips taken by Irish Residents for holidays.

In 2018, Irish Residents spent €4.9 billion on holidays abroad.

4.9 Billion = 4,900,000,000

**Average Spend** 

 $=\frac{4,900,000,000}{5,155,000}$ 

= 950.53

The average spend by Irish residents on holidays abroad was €950.53



Calculate the average spend by Irish residents on holidays in Ireland.

5,323,000 Irish Residents took 5,323,000 trips for holiday purposes in Ireland in 2018.

In 2018, Irish Residents spent €1.2 billion on domestic holidays .

1.2 Billion = 1,200,000,000

#### Average Spend

 $=\frac{1,200,000,000}{5,323,000}$ 

= 225.44

### The average spend by Irish residents on holidays in Ireland was €225.44

Estimate the number of oversees trips to Ireland for holidays, leisure and recreation purposes in 2017, to three significant figures.

The number of overseas trips to Ireland for holidays, leisure and recreation purposes increased by 11.1% to over **5.2 million trips** in 2018 compared to the same period in 2017. €5.2 Million = 5,200,000

5,200,000 = 111.1%

 $\frac{5,200,000}{111.1} \times 100 = 100\%$ 

4,680,468.047 = 100%

The number of oversees trips to Ireland for holidays, leisure and recreation purposes in 2017 was approximately 4,680,000.

Section 14:Q3

#### SECTION 15

Question 1

Question 2

Question 3

What was the percentage of licensed drivers that were aged 80 and over in 2018, correct to two decimal places?



In 2018, there were 73,194 full driving licences held by persons aged 80 and over.

% Drivers Aged 80 and Over

Section 15:Q1

$$=\frac{73,194}{2,667,128}\times100$$

= 2.74%

2.74% of drivers were aged 80 or over.

What was the percentage of licensed drivers that were in the 40-49 age group in 2018, correct to two decimal places?



The age-group with the highest number of licences was the 40-49 age-group with 600,255 licences. % Drivers Aged 40 – 49

- $=\frac{600,255}{2,667,128}\times100$
- = 22.51%

22.51% of drivers were aged between 40 and 49.

Section 15:Q2

Create a suitable chart to illustrate the number of users for each of the three modes of public transport.



Public Transport

Section 15:Q3

Calculate the average number of passengers per cruise ship that arrived in Ireland in 2018.

300 CRUISE SHIPS In 2018, 300 cruise ships arrived in Ireland

and carried **398,505** passengers, with **196,899** arriving in **Dublin Port** and **157,669** in **Port of Cork**.



Section 15:Q4

**Average Number of Passengers** 

 $=\frac{398,505}{300}\times 100$ 

= 1328.35

There were an average of 1328 passengers per cruise ship.

#### **SECTION 16**

Question 1

Question 2

Question 3

**Question 4** 

Question 5

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Express each of the areas of oats and wheat sown in 2018 as a percentage of the respective areas sown in 1848.

#### Oats are in decline

The long-term decline in tillage is associated more with oats than with any other crop. The area of oats sown in June 2018 was 18,000 hectares, compared to 566,000 in 1848, and represented 3.2% of the area sown in 1848.

 $\frac{18,000}{566,000} \times 100 = 3.18\%$ 

## Wheat is in decline

Wheat also decreased from 245,000 hectares in 1848 to 58,000 hectares in June 2018.  $\frac{58,000}{245,000} \times 100 = 23.67\%$ 



Calculate the percentage increase in the area of barley sown from 1848 to 2018.

In 1848, there were 119,000 hectares of barley sown. In June 2018, there was 185,000 hectares.

 $\frac{\text{Percentage Increase}}{\text{Original}} \times 100$ 

 $\frac{\text{Increase}}{\text{Original}} \times 100$ 

 $=\frac{185,000-119,000}{119,000}\times100$ 

 $=\frac{66,000}{119,000}\times 100$ 

= 55.46%

How many sheep were there in Ireland in 2017?

There were 5.11 million sheep in Ireland in June 2018, down 1.7% from 2017.

€5.11 Million = 5,110,000

5,110,000 = 98.3%

 $\frac{5,110,000}{98.3} \times 100 = 100\%$ 

5,198,372.33 = 100%

There were approximately 5,198,372 sheep in Ireland in 2017.



Section 16:Q3

How many pigs were there in Ireland in 2017?

There were 1.62 million pigs in Ireland in June 2018, up 4.2% from 2017.

€1.62 Million = 1,620,000

1,620,000 = 104.2%

 $\frac{1,620,000}{104.2} \times 100 = 100\%$ 

1,554,702.495 = 100%

There were approximately 1,554,703 pigs in Ireland in 2017.



Calculate the difference between the mean and median prices of an acre of agricultural land sold in Ireland in 2018.

In 2018, there were 37,436 acres of agricultural land sold in Ireland for a total value of  $\leq 210.8$  million at a median price of  $\leq 6,444$ .

210.8 million = 210,800,000

Mean	Median
$=\frac{210,800,000}{37,436}$	= 6,444
= 5630.94	

Difference

= 6444 - 5630.94

= €813.06

Section 16:Q5