**Logo, icon

Description automatically generatedFX Library Modules**

**Percentages**

Age 11-15

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**Question**

Determine the original amount if <EFOFEX>
id:fxe{0420c106-c2e8-4f69-8eef-d89068a55479}
FXGP:DP-KEfy4kL
FXData:

</EFOFEX>% of the original amount is <EFOFEX>
id:fxe{87e7a098-fdd3-4298-868a-45c82f4c2260}
FXGP:DP-KEfy4kL
FXData:

</EFOFEX>

**Solution**

<EFOFEX>
id:fxe{02276426-e8dd-4e63-aef3-2a0f1c27379c}
FXGP:DP-KEfy4kL
FXData:

</EFOFEX>

**Notes**

3000+ variations.

**Question**

A middle-aged man notices that he has gained <EFOFEX>
id:fxe{10806e61-f58a-4c78-b623-becb1391ee9e}
FXGP:DP-BTNrW2r
FXData:

</EFOFEX>kg and now weighs <EFOFEX>
id:fxe{8b2bc5cf-929d-43a8-96a7-abf559481ae8}
FXGP:DP-BTNrW2r
FXData:

</EFOFEX>kg.

1. What percentage of his current weight is weight-gain?
2. What percentage of his original weight did he gain?

Calculate your answers to the nearest whole percentage.

**Solution**

1. <EFOFEX>
   id:fxe{d67749ad-3328-4796-a5c9-c4a708c4ccf4}
   FXGP:DP-BTNrW2r
   FXData:

   </EFOFEX>
2. <EFOFEX>
   id:fxe{2746fa74-d953-4931-925b-09663ac89084}
   FXGP:DP-BTNrW2r
   FXData:

   </EFOFEX>

**Notes**

21 variations.

**Question**

A food manufacturer has discovered that <EFOFEX>
id:fxe{00339074-41e1-4b6c-93d3-5dcc0cd9667d}
FXGP:DP-DTKw8yx
FXData:

</EFOFEX>% of their packets are not being filled correctly and are underweight. If the manufacturer packs <EFOFEX>
id:fxe{0e739d6e-9f4c-4aec-8b6b-4b5903b6861b}
FXGP:DP-DTKw8yx
FXData:

</EFOFEX> packets per week, how many are likely to be underweight?

**Solution**

<EFOFEX>
id:fxe{881c27d5-f315-448b-9e42-9f12a7bb2976}
FXGP:DP-DTKw8yx
FXData:

</EFOFEX>

**Notes**

4000+ variations.

**Question**

Jane has a weekly salary of <EFOFEX>
id:fxe{ba4c33f8-6183-4f06-9ac7-b1317b7bddeb}
FXGP:DP-QsxUQSF
FXData:

</EFOFEX>. Last week she spent <EFOFEX>
id:fxe{caaba86b-637f-408c-89a7-c49d298c7827}
FXGP:DP-QsxUQSF
FXData:

</EFOFEX> on food. What percentage of Jane’s income is spent on food?

**Solution**

<EFOFEX>
id:fxe{ee7d794b-1f7f-4191-8801-44fdfb9d9813}
FXGP:DP-QsxUQSF
FXData:

</EFOFEX>

**Notes**

200+ variations.

**Question**

Jack received his test results and found that he had scored <EFOFEX>
id:fxe{42169360-1364-4897-8afc-c88f47816120}
FXGP:DP-GmHsHkd
FXData:

</EFOFEX> out of a possible <EFOFEX>
id:fxe{3b30712d-c89b-4a59-ad0d-5cd04a51e802}
FXGP:DP-GmHsHkd
FXData:

</EFOFEX>. Convert Jack’s mark to a percentage (round to the nearest whole number).

**Solution**

<EFOFEX>
id:fxe{d88cd7f4-009e-4535-9c90-520696a50800}
FXGP:DP-GmHsHkd
FXData:

</EFOFEX>

**Notes**

200+ variations.

**Question**

An alloy contains <EFOFEX>
id:fxe{8fe1944e-9e84-474e-9565-8e0a0ce34d38}
FXGP:DP-2u5rfZu
FXData:

</EFOFEX> nickel. If a sample of the alloy weighs <EFOFEX>
id:fxe{745b3b1c-3a73-447b-8dc6-1e71baec839e}
FXGP:DP-2u5rfZu
FXData:

</EFOFEX>, how much of the sample is nickel?

**Solution**

<EFOFEX>
id:fxe{5925757c-177c-4c39-86ec-22eeb6e801f1}
FXGP:DP-2u5rfZu
FXData:

</EFOFEX>

**Notes**

3000+ variations.

**Question**

Hematite iron ore contains between 54% and 66% iron. The percentage of iron in the ore is called the “grade” of the ore. A geologist has collected a <EFOFEX>
id:fxe{01add34c-a0f7-4966-84f2-fcd0c153561a}
FXGP:DP-G9AsEEB
FXData:

</EFOFEX> sample of hematite and is analysing its iron content.

1. Calculate the highest and lowest expected values for the grams of iron in the sample.
2. The geologist finds that their sample contains <EFOFEX>
   id:fxe{32ab9e6a-ca31-4d59-90cc-bbcb70808836}
   FXGP:DP-G9AsEEB
   FXData:

   </EFOFEX> of iron. Find the grade of the iron ore (to the nearest whole number).

**Solution**

1. <EFOFEX>
   id:fxe{a15f6679-8f07-4fd9-8cfb-0fb09ef195f0}
   FXGP:DP-G9AsEEB
   FXData:

   </EFOFEX>
2. <EFOFEX>
   id:fxe{45407db3-1b02-4ced-bf30-2b7f2d18c281}
   FXGP:DP-G9AsEEB
   FXData:

   </EFOFEX>

**Notes**

3000+ variations.

**Question**

Chris scored <EFOFEX>
id:fxe{ab8d2314-0b4b-4bc3-9714-616b39570767}
FXGP:DP-A7aymZP
FXData:

</EFOFEX> out of <EFOFEX>
id:fxe{eda5a941-b265-449d-bc46-69c3039c8656}
FXGP:DP-A7aymZP
FXData:

</EFOFEX> on his History exam and <EFOFEX>
id:fxe{2692ebf2-209c-4921-aabf-20b59ca0403b}
FXGP:DP-A7aymZP
FXData:

</EFOFEX> out of <EFOFEX>
id:fxe{e94e2684-d78e-4235-8c4a-a779228870b9}
FXGP:DP-A7aymZP
FXData:

</EFOFEX> on his Geography exam. On which exam did Chris perform the best?

**Solution**

<EFOFEX>
id:fxe{9ada2d7d-a2eb-4611-8fff-1e86ca30f1f8}
FXGP:DP-A7aymZP
FXData:

</EFOFEX>

**Notes**

15000+ variations.

**Question**

Complete the table:

|  |  |  |
| --- | --- | --- |
| **Decimal** | **Fraction** | **Percentage** |
|  | <EFOFEX> id:fxe{462c8ce5-3bf3-465c-abc3-f4647807db41} FXGP:DP-E3enMSa FXData:  </EFOFEX> |  |
| <EFOFEX> id:fxe{98e2e4c9-2999-45a5-bb17-dfde61d1e8da} FXGP:DP-E3enMSa FXData:  </EFOFEX> |  |  |
|  |  | <EFOFEX> id:fxe{10e83631-b976-4c8f-88a7-d99b8e20e423} FXGP:DP-E3enMSa FXData:  </EFOFEX> |
|  | <EFOFEX> id:fxe{75a21b1b-966b-4ff1-aa6f-f83f45f86278} FXGP:DP-E3enMSa FXData:  </EFOFEX> |  |
| <EFOFEX> id:fxe{a0eb3dd2-d446-4fda-abc8-3aa60012e11d} FXGP:DP-E3enMSa FXData:  </EFOFEX> |  |  |
|  |  | <EFOFEX> id:fxe{4bface3b-ddb6-4b1a-8797-7ee520207f48} FXGP:DP-E3enMSa FXData:  </EFOFEX> |

**Solution**

|  |  |  |
| --- | --- | --- |
| **Decimal** | **Fraction** | **Percentage** |
| <EFOFEX> id:fxe{4374d550-47c4-4e9b-9d15-c7e7f8a0c4cc} FXGP:DP-E3enMSa FXData:  </EFOFEX> | <EFOFEX> id:fxe{7ec3c0a0-82ca-4439-8829-396139f92f83} FXGP:DP-E3enMSa FXData:  </EFOFEX> | <EFOFEX> id:fxe{85f18110-6f7d-4e7f-8327-644cb5a4423a} FXGP:DP-E3enMSa FXData:  </EFOFEX> |
| <EFOFEX> id:fxe{a3fd41f1-a67c-4304-959b-84515b86320c} FXGP:DP-E3enMSa FXData:  </EFOFEX> | <EFOFEX> id:fxe{082cf6ba-8761-4363-bcaf-8f3b25355db5} FXGP:DP-E3enMSa FXData:  </EFOFEX> | <EFOFEX> id:fxe{dba69abd-be0a-4de2-a25e-6bde8cb51edb} FXGP:DP-E3enMSa FXData:  </EFOFEX> |
| <EFOFEX> id:fxe{fec3f80d-4696-4f8b-8667-ced6e305b737} FXGP:DP-E3enMSa FXData:  </EFOFEX> | <EFOFEX> id:fxe{e37b5a45-0360-43cd-9ebf-9fec8fea1b0c} FXGP:DP-E3enMSa FXData:  </EFOFEX> | <EFOFEX> id:fxe{85e9656e-b4b2-43d7-9d5b-0307c2bb7d30} FXGP:DP-E3enMSa FXData:  </EFOFEX> |
| <EFOFEX> id:fxe{51f10154-b35e-442a-9a4d-d1717df8814e} FXGP:DP-E3enMSa FXData:  </EFOFEX> | <EFOFEX> id:fxe{62940732-6c27-4b1c-a992-67b97d6851fd} FXGP:DP-E3enMSa FXData:  </EFOFEX> | <EFOFEX> id:fxe{319b241f-6989-49e0-83fb-e5e59e52b1e3} FXGP:DP-E3enMSa FXData:  </EFOFEX> |
| <EFOFEX> id:fxe{a5356c05-eb36-4065-b3f5-02aaa5290e1e} FXGP:DP-E3enMSa FXData:  </EFOFEX> | <EFOFEX> id:fxe{42661b71-7583-43c0-9a8d-ca63cf9df125} FXGP:DP-E3enMSa FXData:  </EFOFEX> | <EFOFEX> id:fxe{f17068ba-9080-491c-bcdf-a4ff09318c5c} FXGP:DP-E3enMSa FXData:  </EFOFEX> |
| <EFOFEX> id:fxe{f6ce7b60-042a-44da-844e-833367c20dab} FXGP:DP-E3enMSa FXData:  </EFOFEX> | <EFOFEX> id:fxe{b7a7067e-660f-4580-aa23-3f6d2363154f} FXGP:DP-E3enMSa FXData:  </EFOFEX> | <EFOFEX> id:fxe{d3516fa6-b0e5-4baf-83b6-5f6de266eb09} FXGP:DP-E3enMSa FXData:  </EFOFEX> |

**Notes**

8000+ variations.

**Question**

A sports stadium has sold <EFOFEX>
id:fxe{c3e1be1e-681e-464a-af46-25753f5cd839}
FXGP:DP-hfCgrVT
FXData:

</EFOFEX>% of its seats. If the capacity of the stadium is <EFOFEX>
id:fxe{cfe949cf-a34a-4cbb-8e4c-4b92d63e4c42}
FXGP:DP-hfCgrVT
FXData:

</EFOFEX>, how many of the seats have not been sold?

**Solution**

<EFOFEX>
id:fxe{4eba83eb-faa8-4ec7-9345-e8e9d59b6255}
FXGP:DP-hfCgrVT
FXData:

</EFOFEX>

**Notes**

500+ variations.

**Question**

Increase <EFOFEX>
id:fxe{d840ed2d-7bc0-46d9-84f9-81470e14cd41}
FXGP:DP-c6vcnbx
FXData:

</EFOFEX> by <EFOFEX>
id:fxe{5cacb175-57a1-4310-98fb-6afab64fd131}
FXGP:DP-c6vcnbx
FXData:

</EFOFEX>

**Solution**

<EFOFEX>
id:fxe{7cacc182-6180-42ed-b150-7ba650d10ab8}
FXGP:DP-c6vcnbx
FXData:

</EFOFEX>

**Notes**

300+ variations.

**Question**

Decrease <EFOFEX>
id:fxe{bcc8bfa1-4411-4897-b2b0-2f616032f98d}
FXGP:DP-B8UH39e
FXData:

</EFOFEX> by <EFOFEX>
id:fxe{8eb284bb-e0be-44b4-8b4c-526f88986e27}
FXGP:DP-B8UH39e
FXData:

</EFOFEX>

**Solution**

<EFOFEX>
id:fxe{bc55b31a-3d0d-4a23-b15d-fa6167c8ee43}
FXGP:DP-B8UH39e
FXData:

</EFOFEX>

**Notes**

300+ variations.

**Question**

A news report has said that the number of babies born in the last year had increased by <EFOFEX>
id:fxe{416aff33-e31c-43c3-911b-6049dcb29faa}
FXGP:DP-XBubRCr
FXData:

</EFOFEX> to <EFOFEX>
id:fxe{332898b8-adad-4b21-8b2b-ac6872425c0e}
FXGP:DP-XBubRCr
FXData:

</EFOFEX>. Approximately (to the nearest 10) how many babies had been born in the year before the increase?

**Solution**

<EFOFEX>
id:fxe{da81a9cd-9183-448c-8c97-b5aefc766978}
FXGP:DP-XBubRCr
FXData:

</EFOFEX>

**Notes**

10000+ variations.

**Question**

The price of entry into a theme park was recently increased by <EFOFEX>
id:fxe{f3635864-79ab-441b-a6ed-fd4f6b6662b5}
FXGP:DP-3pKwLJY
FXData:

</EFOFEX> to <EFOFEX>
id:fxe{b35c7b43-5ea0-480d-98bc-7fd6e7c5e5af}
FXGP:DP-3pKwLJY
FXData:

</EFOFEX>. What was the original price charged to enter the park?

**Solution**

<EFOFEX>
id:fxe{47f8793b-aa2d-4946-bced-0cb57cbdcded}
FXGP:DP-3pKwLJY
FXData:

</EFOFEX>

**Notes**

150+ variations.

**Question**

A farmer has reduced the amount of land that they planted with wheat by <EFOFEX>
id:fxe{e0248091-6c29-4913-bb50-31313d32e27b}
FXGP:DP-7NVsh9u
FXData:

</EFOFEX> to <EFOFEX>
id:fxe{5da38b35-7f13-40e3-a868-cd8349a9a255}
FXGP:DP-7NVsh9u
FXData:

</EFOFEX> hectares. How much land (to the nearest hectare) did they originally have planted with wheat?

**Solution**

<EFOFEX>
id:fxe{b0f62574-9dd7-4ed7-9d35-10858d9fe21b}
FXGP:DP-7NVsh9u
FXData:

</EFOFEX>

**Notes**

5000+ variations.

**Question**

The price of a particular new car has increased from <EFOFEX>
id:fxe{895cd3ea-c4bb-4b89-a751-81033c67842d}
FXGP:DP-WKMHaFK
FXData:

</EFOFEX> to <EFOFEX>
id:fxe{fff8aab3-918b-4038-a459-bc3b8d034388}
FXGP:DP-WKMHaFK
FXData:

</EFOFEX>. Find the percentage increase (to 1dp).

**Solution**

<EFOFEX>
id:fxe{e50a70f8-121e-447f-9c09-adf813df066a}
FXGP:DP-WKMHaFK
FXData:

</EFOFEX>

**Notes**

500+ variations.

**Question**

The population of a town decreased from <EFOFEX>
id:fxe{2aae883d-b019-4456-a2fd-81a3bb43797d}
FXGP:DP-pfWY6sn
FXData:

</EFOFEX> to <EFOFEX>
id:fxe{5f5d58c1-eaeb-44eb-ac16-85be6afef0a8}
FXGP:DP-pfWY6sn
FXData:

</EFOFEX>. Find the percentage increase (to 1dp).

**Solution**

<EFOFEX>
id:fxe{a3219890-357a-4aa7-9efb-f863cb650c1c}
FXGP:DP-pfWY6sn
FXData:

</EFOFEX>

**Notes**

250000+ variations.

**Question**

Over the summer holidays James had a growth spurt, growing from <EFOFEX>
id:fxe{eb2495a0-4041-4fc3-b920-45eb471b7555}
FXGP:DP-UHUJAfb
FXData:

</EFOFEX> to <EFOFEX>
id:fxe{425ef79a-ec29-4e6b-86d5-0ee8b34a98b1}
FXGP:DP-UHUJAfb
FXData:

</EFOFEX>. What was the percentage increase in James’ height? (to 1dp)

**Solution**

<EFOFEX>
id:fxe{917efa3d-5453-4f2c-9011-5c9631040857}
FXGP:DP-UHUJAfb
FXData:

</EFOFEX>

**Notes**

400+ variations.

**Question**

The total price of an item including GST (at 10%) is <EFOFEX>
id:fxe{ad2e57a9-a202-4515-bd11-b29936d87fe8}
FXGP:DP-hMELydR
FXData:

</EFOFEX>. How much of the purchase price is GST (to the nearest cent).

**Solution**

<EFOFEX>
id:fxe{5c72e035-c7e0-4393-bba8-338cdd746858}
FXGP:DP-hMELydR
FXData:

</EFOFEX>

**Notes**

150+ variations.

**Question**

A stock investor buys <EFOFEX>
id:fxe{397407e8-6772-490f-bf84-ff07757b1e8b}
FXGP:DP-UUWsxZX
FXData:

</EFOFEX> worth of shares on Monday. On Tuesday, the share price drops by <EFOFEX>
id:fxe{643fad19-d003-4b54-9458-51ce4d05dcbb}
FXGP:DP-UUWsxZX
FXData:

</EFOFEX>.

1. What are the shares worth after Tuesday’s drop in price?

On Wednesday, the shares jump back up in value and are again worth <EFOFEX>
id:fxe{6001f3b7-ea95-43b9-be01-25afbe6e94f2}
FXGP:DP-UUWsxZX
FXData:

</EFOFEX> at the end of the day.

1. What percentage rise did the shares experience on Wednesday (to 2dp)?

**Solution**

<EFOFEX>
id:fxe{bde97c94-7afb-427d-a256-84b9b6657fd1}
FXGP:DP-UUWsxZX
FXData:

</EFOFEX>

**Notes**

900+ variations.

**Question**

The price of a new car has risen <EFOFEX>
id:fxe{ac401e5c-4a8e-45a1-9758-4a6cfff0632c}
FXGP:DP-REb8HaL
FXData:

</EFOFEX> per year, every year for the last three years. If the car cost <EFOFEX>
id:fxe{77415d76-92d0-4980-8bbe-d72c1447b96d}
FXGP:DP-REb8HaL
FXData:

</EFOFEX> three years ago, how much does it cost now (to the nearest $100)?

**Solution**

<EFOFEX>
id:fxe{4c6b4cfd-f738-41c8-a11d-a24cda8eef79}
FXGP:DP-REb8HaL
FXData:

</EFOFEX>

**Notes**

100+ variations.

**Question**

The average house price in a popular seaside town has risen from <EFOFEX>
id:fxe{93c6d6c3-e9a9-40e8-a23d-d882ad95e90f}
FXGP:DP-279Rsst
FXData:

</EFOFEX> to <EFOFEX>
id:fxe{e28237e3-7b94-4856-a51d-1cd7d41bf2fe}
FXGP:DP-279Rsst
FXData:

</EFOFEX> in the last year. What is this increase as a percentage (to the nearest whole number)?

**Solution**

<EFOFEX>
id:fxe{db84eecf-b8cf-4f36-8f06-fbfeee1ee21a}
FXGP:DP-279Rsst
FXData:

</EFOFEX>

**Notes**

3000+ variations.