

Worksheet 4: Absolute and relative changes

Calculate the absolute and relative change in price for each product. Decide which product experiences the greater relative change. Then decide which change in price would have a greater effect on an individual with an income of \$10 000 by calculating the proportion of income the price change takes. Compare your conclusion to the relative change in price. Does a larger relative change in price always have a greater effect on income?

The first example has been completed.

- 1 The price of a bicycle changes from \$120 to \$160. The price of a laptop changes from \$1200 to \$1400.

	Bicycle	Laptop
Absolute change:	+\$40	+\$200
Relative change:	$\frac{(\$160 - \$120)}{\$120} \times 100 = +33\%$	$\frac{(\$1400 - \$1200)}{\$1200} \times 100 = +17\%$
Proportion of income taken by the price change:	$\frac{\$40}{\$10000} \times 100 = +0.4\%$	$\frac{\$200}{\$10000} \times 100 = +2\%$

Which product experiences a larger relative increase in price? *The bicycle*

Effect on income: *Although the laptop's price changes by a smaller percentage, the change takes a larger proportion of the individual's income.*

- 2 The price of a book changes from \$18 to \$23. The price of a can of a fizzy drink costing \$3 doubles.

	Book	Can of fizzy drink
Absolute change:	<input type="text"/>	<input type="text"/>
Relative change:	$\frac{(\text{ } - \text{ })}{\text{ }} \times \text{ } = \text{ }$	$\frac{(\text{ } - \text{ })}{\text{ }} \times \text{ } = \text{ }$
Proportion of income taken by the price change:	$\frac{\text{ }}{\text{ }} \times \text{ } = \text{ }$	$\frac{\text{ }}{\text{ }} \times \text{ } = \text{ }$

Which product experiences a larger relative increase in price? _____

Effect on income:



- 3 The price of an airplane ticket changes from \$200 to \$230. The price of a bus ticket changes from \$30 to \$38.

	Airplane ticket	Bus ticket
Absolute change:	<input type="text"/>	<input type="text"/>
Relative change:	$\frac{(\text{ } - \text{ })}{\text{ }} \times \text{ } = \text{ }$	$\frac{(\text{ } - \text{ })}{\text{ }} \times \text{ } = \text{ }$
Proportion of income taken by the price change:	$\frac{\text{ }}{\text{ }} \times \text{ } = \text{ }$	$\frac{\text{ }}{\text{ }} \times \text{ } = \text{ }$

Which product experiences a larger relative increase in price? _____

Effect on income:

- 4 The price of a TV changes from \$1530 to \$1950. The price of a smartphone changes from \$800 to \$1120.

	TV	Smartphone
Absolute change:	<input type="text"/>	<input type="text"/>
Relative change:	$\frac{(\text{ } - \text{ })}{\text{ }} \times \text{ } = \text{ }$	$\frac{(\text{ } - \text{ })}{\text{ }} \times \text{ } = \text{ }$
Proportion of income taken by the price change:	$\frac{\text{ }}{\text{ }} \times \text{ } = \text{ }$	$\frac{\text{ }}{\text{ }} \times \text{ } = \text{ }$

Which product experiences a larger relative increase in price? _____

Effect on income:



- 5 The price of a cinema ticket changes from \$28 to \$38. The price of a gym membership card changes from \$80 to \$135.

	Cinema ticket	Gym membership card
Absolute change:	<input type="text"/>	<input type="text"/>
Relative change:	$\frac{(\text{ } - \text{ })}{\text{ }} \times \text{ } = \text{ }$	$\frac{(\text{ } - \text{ })}{\text{ }} \times \text{ } = \text{ }$
Proportion of income taken by the price change:	$\frac{\text{ }}{\text{ }} \times \text{ } = \text{ }$	$\frac{\text{ }}{\text{ }} \times \text{ } = \text{ }$

Which product experiences a larger relative increase in price? _____

Effect on income:

- 6 The price of a back pack changes from from \$350 to \$420. The price of a tent changes from \$550 to \$780.

	Back pack	Tent
Absolute change:	<input type="text"/>	<input type="text"/>
Relative change:	$\frac{(\text{ } - \text{ })}{\text{ }} \times \text{ } = \text{ }$	$\frac{(\text{ } - \text{ })}{\text{ }} \times \text{ } = \text{ }$
Proportion of income taken by the price change:	$\frac{\text{ }}{\text{ }} \times \text{ } = \text{ }$	$\frac{\text{ }}{\text{ }} \times \text{ } = \text{ }$

Which product experiences a larger relative increase in price? _____

Effect on income:
