GRADE 7 · UNIT 7 · LESSON 5

Discounts and Markups

MA.7.AR.3.1

I can find a sale price after a discount and a selling price after a markup, two ways.

Warm-Up

1. A sector is 15% of a $340 budget. How many dollars is it?
2. Scale 1 cm : 4 m. A wall is 7.5 cm on the drawing. Real length?
3. Write each percent as a decimal: 35% and 7%
4. Write each percent as a decimal: 120% and 6.5%

Warm-Up

1. A sector is 15% of a $340 budget. How many dollars is it?

   $51

2. Scale 1 cm : 4 m. A wall is 7.5 cm on the drawing. Real length?

   30 m

3. Write each percent as a decimal: 35% and 7%

   0.35 and 0.07

4. Write each percent as a decimal: 120% and 6.5%

   1.2 and 0.065

Vocabulary

original price

the price before a change: the tag price before a sale, or what a store paid (its cost) before a markup

discount

an amount taken off a price, often a percent of the original price: 20% off

sale price

the price after the discount is taken off

markup

an amount a store adds to its cost, often a percent of the cost

selling price

the price after the markup is added: what the store charges

Notes

I. A percent of an amount

A percent of an amount is the percent as a decimal times the amount.

15% of \$70: $0.15 \cdot 70 = 10.50$

Percent	How	Of \$70
10%	$0.10 \cdot 70$	\$7
5%	half of 10%	\$3.50
20%	double 10%	\$14
15%	10% + 5%	\$10.50

Notes

II. A discount, two routes

A $45 shirt is 20% off. Find the sale price.

Take off 20% of the price	Pay 80% of the price
20% of 45: $0.20 \cdot 45 = 9$	$100\% - 20\% = 80\%$
$45 - 9 = 36$	$0.80 \cdot 45 = 36$
Sale price: $36	Sale price: $36

Backwards: the sale price is 80% of the original p, so $0.80p = 36$ and $p = 36 \div 0.80 = 45$.

Notes

III. A markup, two routes

A store pays $30 for a game and marks it up 40%. Find the selling price.

Add 40% of the cost	Charge 140% of the cost
40% of 30: $0.40 \cdot 30 = 12$	100% + 40% = 140%
30 + 12 = 42	$1.40 \cdot 30 = 42$
Selling price: $42	Selling price: $42

Example 1

A $60 jacket is 35% off.

Find the sale price two ways.

Example 1

Take off 35%:

$$0.35 \cdot 60 = 21$$

$$60 - 21 = 39$$

Or pay 65%:

$$0.65 \cdot 60 = 39$$

Answer: The sale price is $39.

Your Turn

An $80 video game is 15% off.

Find the sale price two ways.

Your Turn

An $80 video game is 15% off.

Find the sale price two ways.

Take off 15%: $0.15 \cdot 80 = 12$ and $80 - 12 = 68$

Or pay 85%: $0.85 \cdot 80 = 68$

Answer: $68

Example 2

A bike shop pays $150 for a bike and marks it up 60%.

Find the selling price two ways.

Example 2

Add 60%:

$$0.60 \cdot 150 = 90$$

$$150 + 90 = 240$$

Or charge 160%:

$$1.60 \cdot 150 = 240$$

Answer: The selling price is $240.

Your Turn

A store pays $35 for a helmet and marks it up 80%.

Find the selling price two ways.

Your Turn

A store pays $35 for a helmet and marks it up 80%.

Find the selling price two ways.

Add 80%: $0.80 \cdot 35 = 28$ and $35 + 28 = 63$

Or charge 180%: $1.80 \cdot 35 = 63$

Answer: $63

Whiteboards · Question 1 of 9

A $76 pair of sneakers is 25% off.

How much is the discount?

Answer it.

Whiteboards · Question 1 of 9

A $76 pair of sneakers is 25% off.

How much is the discount?

25% as a decimal is 0.25.

$0.25 \cdot 76 = 19$

Answer: $19

Whiteboards · Question 2 of 9

An $84 tent is 45% off.

What is the sale price?

A. $37.80

B. $80.22

C. $46.20

D. $39

Answer it.

Whiteboards · Question 2 of 9

An $84 tent is 45% off.

What is the sale price?

45% off: pay 55% of the price.

$0.55 \cdot 84 = 46.20$

Answer: C — $46.20

Whiteboards · Question 3 of 9

A store pays $32 for headphones and marks them up 75%.

How much is the markup?

Answer it.

Whiteboards · Question 3 of 9

A store pays $32 for headphones and marks them up 75%.

How much is the markup?

75% as a decimal is 0.75.

$0.75 \cdot 32 = 24$

Answer: $24

Whiteboards · Question 4 of 9

A shop pays $180 for a scooter and marks it up 35%.

What is the selling price?

Answer it.

Whiteboards · Question 4 of 9

A shop pays $180 for a scooter and marks it up 35%.

What is the selling price?

Add 35%: $0.35 \cdot 180 = 63$ and $180 + 63 = 243$

Or charge 135%: $1.35 \cdot 180 = 243$

Answer: $243

Whiteboards · Question 5 of 9

A sign says 40% off.

What percent of the original price do you pay?

A. 40%

B. 60%

C. 140%

D. 0.6%

Answer it.

Whiteboards · Question 5 of 9

A sign says 40% off.

What percent of the original price do you pay?

The whole price is 100%.

$100 - 40 = 60$, so you pay 60%.

Answer: B — 60%

Whiteboards · Question 6 of 9

A $72 video game has two coupons: $15 off, or 25% off.

Which coupon saves more money?

Answer it.

Whiteboards · Question 6 of 9

A $72 video game has two coupons: $15 off, or 25% off.

Which coupon saves more money?

$15 off saves $15.

25% off saves $0.25 \cdot 72 = 18$

$18 - 15 = 3$

Answer: 25% off: it saves $18, $3 more

Whiteboards · Question 7 of 9

After a 20% discount, a hoodie's sale price is $52.

What was the original price?

Answer it.

Whiteboards · Question 7 of 9

After a 20% discount, a hoodie's sale price is $52.

What was the original price?

20% off: the sale price is 80% of the original price p.

$0.80p = 52$

Divide by 0.80: $p = 52 \div 0.80 = 65$

Answer: $65

Whiteboards · Question 8 of 9

A $95 bike is 30% off, and Mia rides it 6 miles home.

What is the bike's sale price?

Answer it.

Whiteboards · Question 8 of 9

A $95 bike is 30% off, and Mia rides it 6 miles home.

What is the bike's sale price?

30% off: pay 70% of the price.

$0.70 \cdot 95 = 66.50$

Answer: $66.50

Whiteboards · Question 9 of 9

Ana says the sale price of an \$85 coat at 30% off is $0.3 \cdot 85$.

What does $0.3 \cdot 85$ give? What should Ana do next?

Write your answer in sentences.

Whiteboards · Question 9 of 9

Ana says the sale price of an \$85 coat at 30% off is $0.3 \cdot 85$.

What does $0.3 \cdot 85$ give? What should Ana do next?

$0.3 \cdot 85 = 25.50$ is the discount.

Take it off: $85 - 25.50 = 59.50$

Or pay 70%: $0.7 \cdot 85 = 59.50$

Answer: \$25.50 off; sale price \$59.50

Independent Practice

1. Find 15% of $46 using 10% and 5%.
2. A $38 shirt is 20% off. Find the sale price.
3. A store pays $55 for a lamp and marks it up 40%. Find the selling price.
4. A $120 bike is 35% off. What percent of the price do you pay, and what is the sale price?
5. A $36 game: $8 off, or 25% off. Which coupon saves more money?
6. After a 40% discount, a jacket costs $54. What was the original price?

Before You Go

A percent of an amount: the percent as a decimal times the amount.

Discount: pay less than 100%. Markup: charge more than 100%.

Monday: tax, tips and fees — the same two routes, going up.

IXL

1. Open IXL and start today's skills.
2. Work on paper where the question needs work. The answer box does not show it.
3. Every skill listed is required, to a SmartScore of 60. Due by the Unit 7 test.

Today's skills — all required

Markups and sales (N2V)
Sale prices: find the original price (BDA)
Which is the better coupon? (QT6)