ملزمة مراجعة نهاية الفصل



تم تحميل هذا الملف من موقع المناهج الإماراتية	
موقع المناهج ⇦ المناهج الإماراتية ⇦ الصف السابع ⇦ رياضيات ⇦ الفصل الأول ⇦ ملفات متنوعة ⇦ الملف	
تاريخ إضافة الملف على موقع المناهج: 2026-11-13 20:18:26	
المزيد من مادة رياضيات:	ملفات ا كتب للمعلم ا كتب للطالب ا اختبارات الكترونية ا اختبارات ا حلول ا عروض بوربوينت ا أوراق عمل منهج انجليزي ا ملخصات وتقارير ا مذكرات وبنوك ا الامتحان النهائي ا للمدرس

التواصل الاجتماعي بحسب الصف السابع					
صفحة المناهج الإماراتية على فيسبوك					
المواد على تلغرام	التربية الاسلامية	اللغة العربية	اللغة الانجليزية	الرياضيات	

المزيد من الملفات بحسب الصف السابع والمادة رياضيات في الفصل الأول	
1	هيكل 7 متقدم ريفيل
2	أسئلة هيكل – بريدج
3	تجميع هيكل 2027 ريفيل مع حل
4	تجميع هيكل 2027 ريفيل بدون حل
5	تجميع هيكل الرياضيات مع الحل - منهج عربي 2027

تحميل تطبيق المناهج للهواتف الذكية	
تطبيق المناهج على App Store (آبل)	تطبيق المناهج على Play Google (أندرويد)

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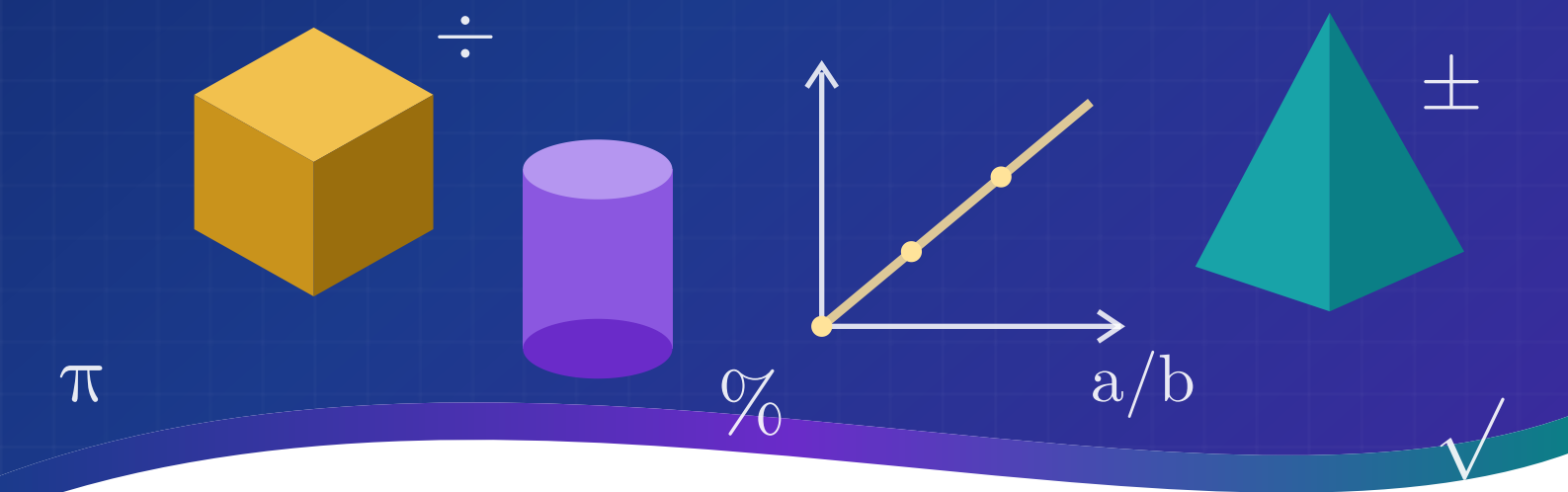
الإمارات العربية المتحدة
وزارة التربية والتعليم

REVEAL MATH

MATHEMATICS

الرياضيات

Grade 7 General | الصف السابع العام



FINAL EOT 1 REVISION

Academic Year 2026–2027 · العام الدراسي 2027–2026

Student Booklet · ملزمة الطالب

Student Name اسم الطالب

Class الشعبة

Teacher المعلم

End of Term 1 Exam Coverage · 25 Questions · 100 Marks · 150 Minutes · Calculator not allowed

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Exam Information & Instructions

معلومات الاختبار والتعليمات

End of Term 1 Exam Coverage · Grade 7 General · Mathematics (Reveal) · 2026–2027

QUESTIONS عدد الأسئلة	MAXIMUM GRADE الدرجة القصوى	DURATION مدة الاختبار
25	**100**	**150 min**
Q1 – Q25	Marks	150 دقيقة

SECTION A – MCQ اختيار من متعدد	SECTION B – FRQ أسئلة مقالية	MODE طريقة التطبيق
Q1–Q20	**Q21–Q25**	**Electronic & Paper**
2–4 marks per question	6–12 marks per question	إلكتروني وورقي

CALCULATOR الآلة الحاسبة

The use of a calculator is not allowed · يُمنع استخدام الآلة الحاسبة

Practise every exercise in this booklet by hand — long division, fraction operations and percent calculations.

How to use this booklet

Q numbers are outcome groups. Q1–Q25 follow the official exam structure. They are not the textbook exercise numbers.

أرقام Q هي مجموعات نواتج التعلم في هيكل الامتحان، وليست أرقام تمارين الكتاب.

Book reference on every exercise. The teal tag shows the book page and the original exercise number.

يظهر رقم صفحة الكتاب ورقم التمرين الأصلي بجانب كل تمرين.

Show every step. Write your working in the lined space. Simplify fractions and write units.

اكتب خطوات الحل كاملة في المساحة المخصصة، وبسّط الكسور واكتب الوحدات.

Check your answer. Estimate first, then check signs (+/−), rounding and the question asked.

قدّر الإجابة أولًا، ثم تحقق من الإشارات والتقريب والمطلوب.

Order may change. Questions might appear in a different order in the actual exam.

قد تظهر الأسئلة بترتيب مختلف في الاختبار الفعلي.

Section B needs full solutions. Free-response answers are marked on method as well as the final answer.

في الأسئلة المقالية تُحتسب خطوات الحل والإجابة النهائية.

Outcomes as written in **LMS (SS&IP_AY26-27_Mathematics_G07_General_EN)** + Arabic translation. Answers are in the separate Teacher Guide.

منهاج الإمارات 2025 2026 موقع المناهج الإماراتية

Question Index

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Quick Summary of Rules → page 5 · Section A → page 7 · Section B → page 45

QUICK SUMMARY OF RULES

الملخص السريع للقوانين

Only the topics required by the exam structure

Unit Rates with Fractions — Q1

A unit rate compares a quantity to 1 unit. Divide the first quantity by the second.

$$\frac{1}{10} \div \frac{1}{2} = \frac{1}{10} \times \frac{2}{1} = \frac{1}{5} \text{ mile per second}$$

To divide by a fraction, multiply by its reciprocal.

Proportional Relationships — Q2 · Q3 · Q4 · Q5 · Q21

- **Table:** all ratios $\frac{y}{x}$ are equal → proportional.
- **Constant of proportionality:** $k = \frac{y}{x}$ (unit rate)
- **Equation:**

$$y = kx$$

- **Graph:** a straight line through the origin (0, 0).
- (0, 0): zero of one quantity ↔ zero of the other. (1, *r*): *r* is the unit rate.

Percent of Change — Q7

$$\frac{amount of change}{original amount} \times 100\%$$

New > original → **increase**; new < original → **decrease**.

Percent Error — Q6

$$\frac{|estimate - actual|}{actual} \times 100\%$$

Always divide by the **actual** amount.

Tax · Tip · Markup — Q8 · Q22

amount = percent × price

- Total cost = price + tax (or tip)
- Selling price = wholesale cost + markup
- Percent of markup = $\frac{markup}{wholesale cost}$

Shortcut: 7% tax → total = 1.07 × price.

Discount (Markdown) — Q9 · Q22

sale price = original price − discount

- discount = percent × original price
- 40% off → sale price = 60% of original
- Successive discounts: apply the 2nd to the *reduced* price.

Simple Interest — Q10

$$I = Prt$$

P = principal, *r* = annual rate (decimal), *t* = time in **years** (6 months = 0.5 year).

Add & Subtract Integers — Q11 · Q23

- **Same signs:** add absolute values, keep the sign.
- **Different signs:** subtract absolute values, take the sign of the larger absolute value.
- **Subtract** = add the additive inverse:

$$a - b = a + (-b)$$

Multiply & Divide Integers

Q12 · Q13 · Q14

- Same signs → **positive**; different signs → **negative**.
- Even number of negative factors → positive; odd → negative.
- Division uses a related multiplication sentence:

$-64 \div (-8) = 8$ because $-8 \times 8 = -64$

Fractions → Decimals

Q15 · Q24

Divide the numerator by the denominator.

- **Terminating:** $\frac{5}{8} = 0.625$
- **Repeating** (bar notation): $\frac{2}{9} = 0.\overline{2}$, $-\frac{5}{6} = -0.8\overline{3}$
- The bar goes only over the digit(s) that repeat.

Additive Inverse & Adding Rationals

Q16 · Q17

- Additive inverse of a is $-a$; $a + (-a) = 0$.
- Use a common denominator; change mixed numbers to improper fractions or add parts separately.
- Decimals + fractions: convert to one form first.

Subtract · Multiply · Divide Rationals

Q18 · Q19 · Q20 · Q25

$$\frac{a}{b} - \frac{c}{d} = \frac{a}{b} + \left(-\frac{c}{d}\right)$$

$$\frac{a}{b} \times \frac{c}{d} = \frac{ac}{bd} \quad \frac{a}{b} \div \frac{c}{d} = \frac{a}{b} \times \frac{d}{c}$$

Use the integer sign rules; write mixed numbers as improper fractions first.

SECTION A

MULTIPLE CHOICE QUESTIONS

القسم الأول: أسئلة الاختيار من متعدد

Q1 Q2 Q3 Q4 Q5 Q6 Q7 Q8 Q9 Q10

Q11 Q12 Q13 Q14 Q15 Q16 Q17 Q18 Q19

Q20

20 outcome groups · 2–4 marks each · Book question text unchanged + four answer choices (A–D)

QUESTION
Q1

QUESTION Q1

Section A · Multiple Choice Question · 2–4 marks

LEARNING OUTCOME – الناتج التعليمي

Find unit rates when one or both quantities are fractions

إيجاد معدلات الوحدة عندما تكون إحدى الكميتين أو كلتاهما كسورًا.

Lesson: Lesson 1-1 · Unit Rates Involving Ratios of Fractions | **Book Page:** 11 | **Required Exercises:** 1–6

Solve each problem. Use any strategy, such as a bar diagram, double number line, ratio table, or division.

1. A truck driver drove 48 miles in 45 minutes. At this rate, how many miles can the truck driver drive in one hour? (Example 1) Book p. 11 · Ex. 1

CHOOSE THE CORRECT ANSWER – اختر الإجابة الصحيحة

A) 64 miles
B) 36 miles
C) 60 miles
D) 48 miles

2. Russell runs $\frac{9}{10}$ mile in 5 minutes. At this rate, how many miles can he run in one minute? (Example 1) Book p. 11 · Ex. 2

CHOOSE THE CORRECT ANSWER – اختر الإجابة الصحيحة

A) $4\frac{1}{2}$ miles
B) $\frac{9}{10}$ mile
C) $\frac{1}{2}$ mile
D) $\frac{9}{50}$ mile

3. A small airplane flew 104 miles in 50 minutes. At this rate, how many miles can it fly in one hour? *(50 minutes = $\frac{5}{6}$ hour)* (Example 1) Book p. 11 · Ex. 3

CHOOSE THE CORRECT ANSWER – اختر الإجابة الصحيحة

A) $86\frac{2}{3}$ miles
B) 104 miles
C) 124.8 miles
D) 130 miles

4. DeAndre downloaded 8 apps onto his tablet in 12 seconds. At this rate, how many apps could he download in one minute? *(12 seconds = $\frac{1}{5}$ minute)* (Example 1) Book p. 11 · Ex. 4

CHOOSE THE CORRECT ANSWER – اختر الإجابة الصحيحة

A) 1.6 apps
B) 40 apps
C) 96 apps
D) 20 apps

5. In Lixue's garden, the green pepper plants grew 5 inches in $\frac{3}{4}$ month. At this rate, how many feet can they grow in one month? *(Let 5 inches = $\frac{5}{9}$ foot)* (Example 2)

Book p. 11 · Ex. 5

CHOOSE THE CORRECT ANSWER – اختر الإجابة الصحيحة

A $\frac{20}{27}$ foot

B $\frac{5}{12}$ foot

C $\frac{27}{20}$ feet

D $\frac{4}{9}$ foot

6. Thunder from a bolt of lightning travels $\frac{1}{10}$ mile in $\frac{1}{2}$ second. At this rate, how many miles can it travel in one second? (Example 2)

Book p. 11 · Ex. 6

CHOOSE THE CORRECT ANSWER – اختر الإجابة الصحيحة

A $\frac{1}{20}$ mile

B 2 miles

C 5 miles

D $\frac{1}{5}$ mile

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QUESTION
Q2

QUESTION Q2

Section A · Multiple Choice Question · 2–4 marks

LEARNING OUTCOME – الناتج التعليمي

Determine whether two quantities shown in a table are in a proportional relationship by testing for equivalent ratios

تحديد ما إذا كانت كميتان معروضتان في جدول تمثلان علاقة تناسبية، وذلك باختبار تكافؤ النسب.

Lesson: Lesson 1-3 · Tables of Proportional Relationships

Book Page: 29, 30

Required Exercises: p.29 5–8, p.30 9–10

Part A **Book Page 29** · Exercises 5–8 · Lesson 1-3 · Tables of Proportional Relationships

5. Rocko paid $12.50 for 25 game tickets. Louisa paid $17.50 for 35 game tickets. What is the constant of proportionality? (Example 3)

Book p. 29 · Ex. 5

CHOOSE THE CORRECT ANSWER – اختر الإجابة الصحيحة

A) 2
B) 0.25
C) 0.5
D) 5

6. A baker, in 70 minutes, iced 40 cupcakes and, in 49 minutes, iced 28 cupcakes. What is the constant of proportionality? (Example 3)

Book p. 29 · Ex. 6

CHOOSE THE CORRECT ANSWER – اختر الإجابة الصحيحة

A) $\frac{7}{4}$
B) $\frac{4}{7}$
C) $\frac{4}{9}$
D) $\frac{1}{2}$

7. The table shows the amount of dietary fiber in bananas. Use the table to find the constant of proportionality. (Example 4) Book p. 29 · Ex. 7

Dietary Fiber (g)	9.3	18.6	27.9	37.2
Bananas	3	6	9	12

CHOOSE THE CORRECT ANSWER – اختر الإجابة الصحيحة

(A) 3.1 (B) 0.32
(C) 6.2 (D) 3.3

8. Open Response The table shows the distance traveled by a runner. Use the table to find the constant of proportionality. Book p. 29 · Ex. 8

Distance (mi)	4.55	13.65	22.75	31.85
Time (h)	0.5	1.5	2.5	3.5

CHOOSE THE CORRECT ANSWER – اختر الإجابة الصحيحة

(A) 0.11 (B) 4.55
(C) 9.5 (D) 9.1

Part B **Book Page 30** · Exercises 9–10 · Lesson 1-3 · Tables of Proportional Relationships (Apply · Module 1)

9. The table shows the amount a restaurant is donating to a local school based on various dinner bills. Is the amount of the donation proportional to the dinner bill? If so, what would be the donation for a dinner bill of $50? If not, explain. Book p. 30 · Ex. 9

Donations	
Dinner Bill ($)	Donation ($)
25	4.50
30	5.40
35	6.30
40	7.20

CHOOSE THE CORRECT ANSWER – اختر الإجابة الصحيحة

(A) Yes; $8.10
(B) Yes; $9.00
(C) No; the ratios are not equal
(D) Yes; $10.00

10. The table shows the cost to mail various letters based on different weights. Is the cost of mailing a letter proportional to the weight? If so, what would be the cost of mailing a 6-ounce letter? If not, explain. Book p. 30 · Ex. 10

Mailing Costs	
Weight (oz)	Cost ($)
1	0.47
2	0.68
3	0.89
4	1.10

CHOOSE THE CORRECT ANSWER – اختر الإجابة الصحيحة

(A) No; the ratios are not equivalent
(B) Yes; $2.82
(C) Yes; $1.52
(D) Yes; $1.31

QUESTION
Q3

QUESTION Q3

Section A · Multiple Choice Question · 2–4 marks

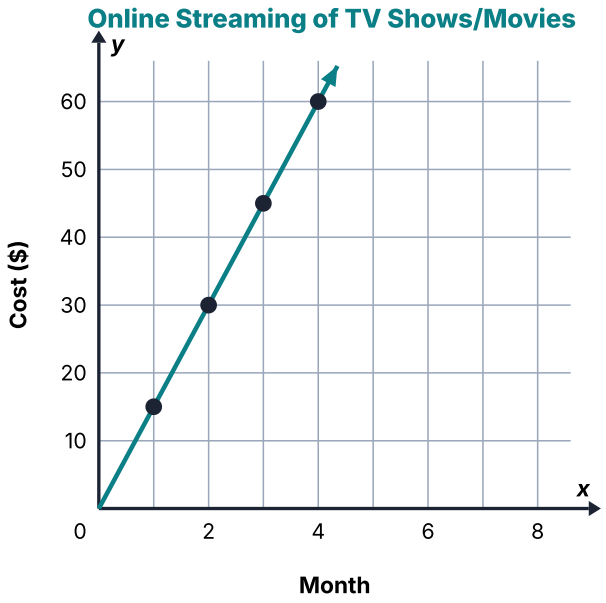
LEARNING OUTCOME – الناتج التعليمي

Explain what the points (0, 0) and (1, r) mean on the graph of a proportional relationship.

تفسير معنى النقطتين (0, 0) و (1, r) على التمثيل البياني لعلاقة تناسبية.

Lesson: Lesson 1-4 · Graphs of Proportional Relationships | **Book Page:** 39 | **Required Exercises:** 3–4

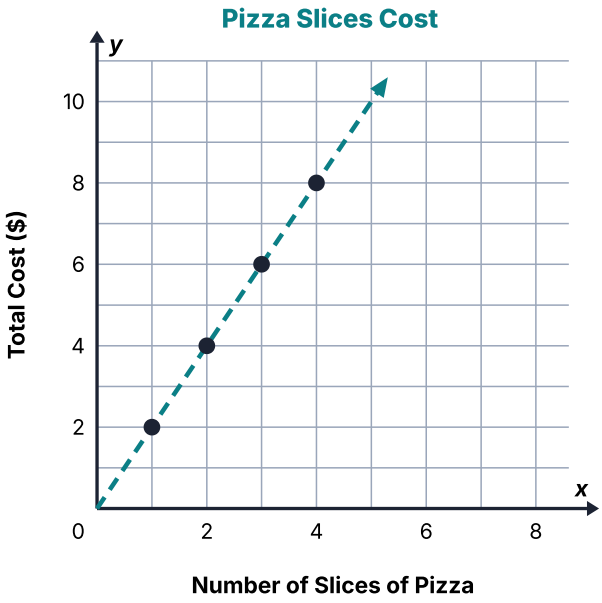
3. The total cost of online streaming is proportional to the number of months. What is the constant of proportionality? (Example 3) Book p. 39 · Ex. 3



CHOOSE THE CORRECT ANSWER – اختر الإجابة الصحيحة

A 30
B 60
C 15
D 4

4. Open Response The cost per slice of pizza is proportional to the number of slices as shown in the graph. What do the points (0, 0) and (1, 2) represent? (Example 4) Book p. 39 · Ex. 4



CHOOSE THE CORRECT ANSWER – اختر الإجابة الصحيحة

A (0, 0): the order starts; (1, 2): 2 slices cost $1

B (0, 0): 0 slices cost $0; (1, 2): 1 slice costs $2

C (0, 0): delivery is free; (1, 2): the total cost is $2 for any order

D (0, 0): 1 slice costs $0; (1, 2): 2 slices cost $2

QUESTION
Q4

QUESTION Q4

Section A · Multiple Choice Question · 2–4 marks

LEARNING OUTCOME – الناتج التعليمي

Identify the constant of proportionality in the equation representing a proportional relationship

تحديد ثابت التناسب في المعادلة التي تمثل علاقة تناسبية.

Lesson: Lesson 1-5 · Equations of Proportional Relationships | **Book Page:** 47 | **Required Exercises:** 1–2

1. Liv earns $9.50 for every two bracelets she sells. The equation $y = 4.75x$, where x represents the number of bracelets and y represents the total cost in dollars earned, represents this situation. What is the constant of proportionality? What does the constant of proportionality represent in the context of the problem? (Example 1)

Book p. 47 · Ex. 1

CHOOSE THE CORRECT ANSWER – اختر الإجابة الصحيحة

A. 4.75; Liv earns $4.75 per bracelet

B. 9.50; Liv earns $9.50 per bracelet

C. 4.75; Liv sells 4.75 bracelets per dollar

D. 2; Liv sells 2 bracelets

2. John ran 3 miles in 25.5 minutes. The equation $y = 8.5x$, where x represents the number of miles and y represents the total time in minutes, represents this situation. What is the constant of proportionality? What does the constant of proportionality represent in the context of the problem? (Example 1)

Book p. 47 · Ex. 2

CHOOSE THE CORRECT ANSWER – اختر الإجابة الصحيحة

A. 25.5; John runs 1 mile in 25.5 minutes

B. 8.5; John runs 8.5 miles per minute

C. 3; John runs 3 miles

D. 8.5; John runs 1 mile in 8.5 minutes

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QUESTION
Q5

QUESTION Q5

Section A · Multiple Choice Question · 2–4 marks

LEARNING OUTCOME – الناتج التعليمي

Write equations to represent proportional relationships

كتابة معادلات لتمثيل العلاقات التناسبية.

Lesson: Lesson 1-5 · Equations of Proportional Relationships | **Book Page:** 47 | **Required Exercises:** 3–6

3. Lincoln bought 3 bottles of an energy drink for $4.50. Write an equation relating the total cost y to the number of energy drinks bought x. (Example 2)

Book p. 47 · Ex. 3

CHOOSE THE CORRECT ANSWER – اختر الإجابة الصحيحة

A $y = 4.5x$

B $y = 3x$

C $y = 1.5x$

D $y = \frac{2}{3}x$

4. The total cost of renting a cotton candy machine for 4 hours is $72. What equation can be used to model the total cost y for renting the cotton candy machine x hours? (Example 2)

Book p. 47 · Ex. 4

CHOOSE THE CORRECT ANSWER – اختر الإجابة الصحيحة

A $y = 72x$

B $y = 18x$

C $y = 4x$

D $y = 288x$

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5. Marley used 7 cups of water to make 4 loaves of French bread. What equation can be used to model the total cups of water needed y for making x loaves of French bread? How many cups of water do you need for 6 loaves of French bread? (Example 3)

Book p. 47 · Ex. 5

CHOOSE THE CORRECT ANSWER – اختر الإجابة الصحيحة

A $y = 1.75x$; 10.5 cups

B $y = 1.75x$; 12 cups

C $y = \frac{4}{7}x$; $3\frac{3}{7}$ cups

D $y = 7x$; 42 cups

6. Mrs. Henderson used $6\frac{3}{4}$ yards of fabric to make 3 elf costumes. What equation can be used to model the total number of yards of fabric y for x costumes? How many yards of fabric do you need for 7 elf costumes? (Example 3)

Book p. 47 · Ex. 6

CHOOSE THE CORRECT ANSWER – اختر الإجابة الصحيحة

A $y = 2.25x$; 14 yards

B $y = 3x$; 21 yards

C $y = 6.75x$; $47\frac{1}{4}$ yards

D $y = 2.25x$; $15\frac{3}{4}$ yards

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QUESTION
Q6

QUESTION Q6

Section A · Multiple Choice Question · 2–4 marks

LEARNING OUTCOME – الناتج التعليمي

Use proportional relationships to solve percent error problems

استخدام العلاقات التناسبية لحل مسائل النسبة المئوية للخطأ.

Lesson: Lesson 2-7 · Percent Error | **Book Page:** 119 | **Required Exercises:** 1–4

Solve each problem.

1. Doug estimates that his soccer team will win 7 games this year. The team actually wins 10 games. What is the percent error of Doug's estimate? Round the answer to the nearest tenth percent, if necessary. (Example 1)

Book p. 119 · Ex. 1

CHOOSE THE CORRECT ANSWER – اختر الإجابة الصحيحة

A 30%
B 42.9%
C 3%
D 70%

2. A mayor estimates that 4,000 people will attend the first day of the county fair. A total of 8,400 people actually attend the first day of the fair. What is the percent error of the mayor's estimate? Round the answer to the nearest tenth percent, if necessary. (Example 1)

Book p. 119 · Ex. 2

CHOOSE THE CORRECT ANSWER – اختر الإجابة الصحيحة

A 110%
B 47.6%
C 44%
D 52.4%

3. Maya estimates that the wait time for her favorite roller coaster is 35 minutes. The actual wait time is 55.5 minutes. What is the percent error of Maya's estimate? Round the answer to the nearest tenth of a percent, if necessary. (Example 1)

Book p. 119 · Ex. 3

CHOOSE THE CORRECT ANSWER – اختر الإجابة الصحيحة

A 58.6%
B 20.5%
C 36.9%
D 63.1%

4. Oliver estimates the weight of his cat to be 16 pounds. The actual weight of his cat is 14.25 pounds. What is the percent error of Oliver's estimate rounded to the nearest tenth of a percent? (Example 1)

Book p. 119 · Ex. 4

CHOOSE THE CORRECT ANSWER – اختر الإجابة الصحيحة

A 10.9%
B 12.3%
C 1.75%
D 87.7%

QUESTION
Q7

QUESTION Q7

Section A · Multiple Choice Question · 2–4 marks

LEARNING OUTCOME – الناتج التعليمي

Use proportional relationships to solve percent of change problems

استخدام العلاقات التناسبية لحل مسائل النسبة المئوية للتغيّر.

Lesson: Lesson 2-1 · Percent of Change | **Book Page:** 71 | **Required Exercises:** 1–5

Find each percent of change. Identify it as a percent of increase or decrease. (Examples 1–3)

1. 8 feet to 10 feet — Book p. 71 · Ex. 1

CHOOSE THE CORRECT ANSWER – اختر الإجابة الصحيحة

(A) 25% increase (B) 20% increase
(C) 25% decrease (D) 2% increase

2. 62 trees to 31 trees — Book p. 71 · Ex. 2

CHOOSE THE CORRECT ANSWER – اختر الإجابة الصحيحة

(A) 100% decrease (B) 50% increase
(C) 31% decrease (D) 50% decrease

3. 136 days to 85 days — Book p. 71 · Ex. 3

CHOOSE THE CORRECT ANSWER – اختر الإجابة الصحيحة

(A) 60% decrease (B) 37.5% increase
(C) 37.5% decrease (D) 51% decrease

4. Last month, the online price of a powered ride-on car was $250. This month, the online price is $330. What is the percent of increase for the price of the car? (Example 1) — Book p. 71 · Ex. 4

CHOOSE THE CORRECT ANSWER – اختر الإجابة الصحيحة

(A) 24.2% increase (B) 32% increase
(C) 80% increase (D) 32% decrease

5. At end of the first half of a football game, Nathan had carried the ball for 50.5 yards. By the end of the game, he carried the ball for a total of 75 yards. Find the percent of increase in the number of yards he carried. Round to the nearest whole tenth if necessary.

Book p. 71 · Ex. 5

(Example 1)

CHOOSE THE CORRECT ANSWER – اختر الإجابة الصحيحة

(A) 48.5%

(B) 32.7%

(C) 24.5%

(D) 148.5%

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QUESTION
Q8

QUESTION Q8

Section A · Multiple Choice Question · 2–4 marks

LEARNING OUTCOME – الناتج التعليمي

Use proportional relationships to find the amount of tax charged for an item

استخدام العلاقات التناسبية لإيجاد مقدار الضريبة المفروضة على سلعة.

Lesson: Lesson 2-2 · Tax | **Book Page:** 81 | **Required Exercises:** 1–5

Find the total cost to the nearest cent. (Examples 1–3)

1. $18 breakfast; 7% tax — Book p. 81 · Ex. 1

CHOOSE THE CORRECT ANSWER – اختر الإجابة الصحيحة

A $1.26
B $18.07
C $19.26
D $25.00

2. $24 shirt; 6% tax — Book p. 81 · Ex. 2

CHOOSE THE CORRECT ANSWER – اختر الإجابة الصحيحة

A $1.44
B $25.44
C $24.06
D $30.00

3. $49.95 pair of shoes; 5% tax — Book p. 81 · Ex. 3

CHOOSE THE CORRECT ANSWER – اختر الإجابة الصحيحة

A $52.45
B $2.50
C $49.95
D $54.95

4. Emily wants to buy new boots that cost $68. The sales tax rate in her city is $5\frac{1}{2}$%. What is the total cost for the boots? (Example 1) — Book p. 81 · Ex. 4

CHOOSE THE CORRECT ANSWER – اختر الإجابة الصحيحة

A $3.74
B $73.50
C $105.40
D $71.74

5. Jack wants to buy a coat that costs $74.95. The sales tax rate in his city is $6\frac{1}{2}\%$. What is the total cost for the coat?

Book p. 81 · Ex. 5

(Example 1)

CHOOSE THE CORRECT ANSWER – اختر الإجابة الصحيحة

(A) $4.87

(B) $79.70

(C) $79.82

(D) $81.45

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QUESTION
Q9

QUESTION Q9

Section A · Multiple Choice Question · 2–4 marks

LEARNING OUTCOME – الناتج التعليمي

Use proportional relationships to find the amount of discount or markdown

استخدام العلاقات التناسبية لإيجاد مقدار الخصم أو التخفيض في السعر.

Lesson: Lesson 2-4 · Discounts | **Book Page:** 91, 97 | **Required Exercises:** p.91 Learn, p.97 1–5

Part A **Book Page 91** · Exercises Learn · Lesson 2-4 · Discounts

Learn Discounts

Book p. 91 · Learn & Example 1

I Can... use proportional relationships to find the amount of discount or markdown.

Discount or **markdown** is the amount by which the regular price of an item is reduced. The sale price is the original price minus the discount. The percent of discount is a percent of decrease.

sale price = original price − discount

Example 1 Discounts

Summer Sports is having a sale. A volleyball has an original price of $59. It is on sale for 65% off the original price.

What is the sale price of the volleyball?

Method 1 Find the amount of the discount. Let d represent the amount of the discount. Write a proportion. Then solve using ratio reasoning.

amount of discount → $\frac{d}{59} = \frac{65}{100}$ ← Percent
original price →

E1. Complete Example 1: solve the proportion for d, then subtract the discount from the original price to find the sale price of the volleyball. Book p. 91 · Example 1

CHOOSE THE CORRECT ANSWER – اختر الإجابة الصحيحة

A $38.35 B $59.00
C $20.65 D $24.00

? Talk About It! In Method 1, why is the answer not $38.35? Book p. 91 · Talk About It!

CHOOSE THE CORRECT ANSWER – اختر الإجابة الصحيحة

A $38.35 is the tax on the volleyball
B $38.35 is the amount of the discount, not the sale price
C $38.35 is the original price
D The proportion should be $\frac{59}{100}$

Part B Book Page 97 · Exercises 1–5 · Lesson 2-4 · Discounts

Find the sale price to the nearest cent. Use any strategy. (Example 1)

1. $140 coat; 10% discount Book p. 97 · Ex. 1

CHOOSE THE CORRECT ANSWER – اختر الإجابة الصحيحة

A $14.00 B $130.00
C $126.00 D $154.00

2. $80 boots; 25% discount Book p. 97 · Ex. 2

CHOOSE THE CORRECT ANSWER – اختر الإجابة الصحيحة

A $20.00 B $60.00
C $55.00 D $100.00

3. $325 tent; 15% discount

Book p. 97 · Ex. 3

CHOOSE THE CORRECT ANSWER – اختر الإجابة الصحيحة

(A) $276.25 (B) $48.75
(C) $310.00 (D) $373.75

4. A toy store is having a sale. A video game system has an original price of $99. It is on sale for 40% off the original price. Find the sale price of the game system. Round to the nearest cent. (Example 1)

Book p. 97 · Ex. 4

CHOOSE THE CORRECT ANSWER – اختر الإجابة الصحيحة

(A) $39.60 (B) $95.00
(C) $138.60 (D) $59.40

5. A yearly coffee club subscription costs $65. Avery received an offer for 62% off the subscription cost. What is the sale price of the subscription? Round to the nearest cent. (Example 1)

Book p. 97 · Ex. 5

CHOOSE THE CORRECT ANSWER – اختر الإجابة الصحيحة

(A) $40.30 (B) $3.00
(C) $24.70 (D) $105.30

QUESTION
Q10

QUESTION Q10

Section A · Multiple Choice Question · 2–4 marks

LEARNING OUTCOME – الناتج التعليمي

Use the simple interest formula to find the amount of interest earned for a given principal, at a given interest rate, for a given period of time

استخدام صيغة الفائدة البسيطة لإيجاد مقدار الفائدة المكتسبة لمبلغ أصلي معلوم، بمعدل فائدة معلوم، ولمدة زمنية معلومة.

Lesson: Module 2 · Solve Percent Problems · Simple Interest

Book Page: 106

Required Exercises: 13–16

13. Persevere with Problems Book p. 106 · Ex. 13

Suppose Serena invests $2,500 for 3 years and 6 months and earns $328.13. What was the rate of interest? Explain how you solved.

CHOOSE THE CORRECT ANSWER – اختر الإجابة الصحيحة

A 13.1%

B 3.75%

C 4.38%

D 37.5%

14. A student stated that an interest rate could not be less than 1%. Do you agree? Why or why not? Book p. 106 · Ex. 14

CHOOSE THE CORRECT ANSWER – اختر الإجابة الصحيحة

A Disagree — rates such as 0.5% are possible

B Agree — interest rates must be whole numbers

C Agree — a rate below 1% earns no interest

D Disagree — rates must be greater than 10%

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15. Justify Conclusions

Book p. 106 · Ex. 15

Suppose you earn 2% on $1,000 for 2 years. Explain how the simple interest is affected if the rate is doubled. What happens if the time is doubled?

CHOOSE THE CORRECT ANSWER – اختر الإجابة الصحيحة

A. Doubling the rate doubles the interest; doubling the time does not change it

B. The interest is 4 times as much in both cases

C. Doubling the time doubles the interest; doubling the rate does not change it

D. The interest doubles in both cases ($40 → $80)

16. Name a principal and interest rate where the amount of simple interest earned in 10 years would be $200. Justify your answer.

Book p. 106 · Ex. 16

CHOOSE THE CORRECT ANSWER – اختر الإجابة الصحيحة

A. $100 at 2%

B. $1,000 at 20%

C. $1,000 at 2%

D. $2,000 at 10%

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QUESTION
Q11

QUESTION Q11

Section A · Multiple Choice Question · 2–4 marks

LEARNING OUTCOME – الناتج التعليمي

Use different methods, including algebra tiles, number lines, or the additive inverse, to subtract integers

استخدام طرائق مختلفة، منها البلاطات الجبرية وخطوط الأعداد والنظير الجمعي، لطرح الأعداد الصحيحة.

Lesson: Lesson 3-2 · Subtract Integers | **Book Page:** 147 | **Required Exercises:** 4–9

Subtract. (Examples 1 and 2)

4. $28 - 14$

Book p. 147 · Ex. 4

CHOOSE THE CORRECT ANSWER – اختر الإجابة الصحيحة

A) 42
B) 14
C) −14
D) −42

5. $-10 - 0$

Book p. 147 · Ex. 5

CHOOSE THE CORRECT ANSWER – اختر الإجابة الصحيحة

A) −10
B) 10
C) 0
D) −1

6. $-33 - 33$

Book p. 147 · Ex. 6

CHOOSE THE CORRECT ANSWER – اختر الإجابة الصحيحة

A) 0
B) 66
C) −1
D) −66

7. $-18 - (-12)$

Book p. 147 · Ex. 7

CHOOSE THE CORRECT ANSWER – اختر الإجابة الصحيحة

A) −30
B) 6
C) −6
D) 30

8. $-28-(-13)$

Book p. 147 · Ex. 8

CHOOSE THE CORRECT ANSWER – اختر الإجابة الصحيحة

(A) −41 (B) −15

(C) 15 (D) 41

9. $-18-(-40)$

Book p. 147 · Ex. 9

CHOOSE THE CORRECT ANSWER – اختر الإجابة الصحيحة

(A) 22 (B) −58

(C) −22 (D) 58

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QUESTION
Q12

QUESTION Q12

Section A · Multiple Choice Question · 2–4 marks

LEARNING OUTCOME – الناتج التعليمي

Use number lines and mathematical properties to multiply integers

استخدام خطوط الأعداد والخصائص الرياضية لضرب الأعداد الصحيحة.

Lesson: Lesson 3-3 · Multiply Integers | **Book Page:** 157 | **Required Exercises:** 3–8

Multiply. (Examples 1, 3, and 5)

3. $9 (-12)$ — Book p. 157 · Ex. 3

CHOOSE THE CORRECT ANSWER – اختر الإجابة الصحيحة

A −108 B 108
C −21 D 3

4. $-6 (-8)$ — Book p. 157 · Ex. 4

CHOOSE THE CORRECT ANSWER – اختر الإجابة الصحيحة

A −48 B −14
C 14 D 48

5. $-10 (-10)$ — Book p. 157 · Ex. 5

CHOOSE THE CORRECT ANSWER – اختر الإجابة الصحيحة

A −100 B −20
C 100 D 0

6. $-11 (-13)$ — Book p. 157 · Ex. 6

CHOOSE THE CORRECT ANSWER – اختر الإجابة الصحيحة

A −143 B 143
C −24 D 2

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7. $7(-5)(4)$

Book p. 157 · Ex. 7

CHOOSE THE CORRECT ANSWER – اختر الإجابة الصحيحة

A −140
B 140
C −6
D 6

8.

$(-8)(-7)(3)$

Book p. 157 · Ex. 8

CHOOSE THE CORRECT ANSWER – اختر الإجابة الصحيحة

A −168
B −12
C 12
D 168

QUESTION
Q13

QUESTION Q13

Section A · Multiple Choice Question · 2–4 marks

LEARNING OUTCOME – الناتج التعليمي

Use number lines and mathematical properties to multiply integers

استخدام خطوط الأعداد والخصائص الرياضية لضرب الأعداد الصحيحة.

Lesson: Lesson 3-3 · Multiply Integers | **Book Page:** 157 | **Required Exercises:** 10–13

10. Evaluate ab if $a = -16$ and $b = -5$. (Example 4) Book p. 157 · Ex. 10

CHOOSE THE CORRECT ANSWER – اختر الإجابة الصحيحة

A) −80
B) 80
C) −21
D) 11

11. Evaluate xy if $x = -10$ and $y = -7$. (Example 4) Book p. 157 · Ex. 11

CHOOSE THE CORRECT ANSWER – اختر الإجابة الصحيحة

A) 70
B) −70
C) −17
D) 3

12. Evaluate xyz^2 if $x = -2$, $y = 7$, and $z = -4$. (Example 6) Book p. 157 · Ex. 12

CHOOSE THE CORRECT ANSWER – اختر الإجابة الصحيحة

A) 224
B) 112
C) −112
D) −224

13. Evaluate a^2bc if $a = 3$, $b = -14$, and $c = -6$. (Example 6) Book p. 157 · Ex. 13

CHOOSE THE CORRECT ANSWER – اختر الإجابة الصحيحة

A) −756
B) 252
C) 756
D) −252

QUESTION
Q14

QUESTION Q14

Section A · Multiple Choice Question · 2–4 marks

LEARNING OUTCOME – الناتج التعليمي

Use a related multiplication sentence to divide integers

استخدام جملة ضرب مرتبطة لقسمة الأعداد الصحيحة.

Lesson: Lesson 3-4 · Divide Integers | **Book Page:** 165 | **Required Exercises:** 3–5

Divide. (Examples 1 and 3)

3. $75 \div (-3)$ — Book p. 165 · Ex. 3

CHOOSE THE CORRECT ANSWER – اختر الإجابة الصحيحة

A) −25 B) 25
C) −72 D) 78

4. $-64 \div (-8)$ — Book p. 165 · Ex. 4

CHOOSE THE CORRECT ANSWER – اختر الإجابة الصحيحة

A) −8 B) −72
C) −56 D) 8

5. $-39 \div (-13)$ — Book p. 165 · Ex. 5

CHOOSE THE CORRECT ANSWER – اختر الإجابة الصحيحة

A) −3 B) −26
C) 3 D) 26

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QUESTION
Q15

QUESTION Q15

Section A · Multiple Choice Question · 2–4 marks

LEARNING OUTCOME – الناتج التعليمي

Convert fractions to decimal equivalents using division

تحويل الكسور إلى الكسور العشرية المكافئة لها باستخدام القسمة.

Lesson: Lesson 4-1 · Rational Numbers

Book Page: 178, 183

Required Exercises: p.178 Learn, p.183 1–6

Part A **Book Page 178** · Exercises Learn · Lesson 4-1 · Rational Numbers (Learn · Module 4)

Learn Rational Numbers Written as Decimals

Book p. 178 · Learn

Any fraction can be expressed as a decimal by dividing the numerator by the denominator. The decimal form of a rational number either terminates in 0s or eventually repeats. **Repeating decimals** are decimals in which 1 or more digits repeat and can be represented using bar notation. In **bar notation**, a bar is drawn only over the digit(s) that repeat.

The following decimals are written in bar notation.

$-0.44444... = -0.\overline{4}$ The digit 4 repeats.

$2.4343... = 2.\overline{43}$ The digits 43 repeat.

T **Complete the table by writing each decimal using bar notation.** Book p. 178

Decimal	Bar Notation
0.11111.....	(A) 0.11 (B) $1.\overline{1}$ (C) $0.\overline{1}$ (D) $0.\overline{01}$
0.61111.....	(A) $0.\overline{61}$ (B) $0.6\overline{1}$ (C) 0.61 (D) $0.\overline{6}$
0.616161.....	(A) $0.\overline{61}$ (B) $0.6\overline{1}$ (C) $0.\overline{616}$ (D) 0.616
6.160000.....	(A) $6.\overline{16}$ (B) $6.1\overline{6}$ (C) $6.\overline{160}$ (D) 6.16
6.1611611611.....	(A) $6.\overline{16}$ (B) $6.1\overline{6}$ (C) $6.\overline{161}$ (D) $6.\overline{1}$

Every decimal can be considered a repeating decimal. Decimals with a repeating digit of zero are also called **terminating decimals**, because the repeating zeros in a terminating decimal are usually truncated, or dropped. For example, the terminating decimal $0.250\overline{0}$ is written as 0.25. The decimal $0.250\overline{0}$ can be considered repeating because the digit 0 repeats.

Pause and Reflect

Book p. 178

Are you ready to move on to the Example? If yes, what have you learned that you think will help you? If no, what questions do you still have? How can you get those questions answered?

Part B **Book Page 183** · Exercises 1–6 · Lesson 4-1 · Rational Numbers

Write each fraction as a decimal. Determine if the decimal is a terminating decimal. (Examples 1 and 2)

1. $\frac{5}{8}$

Book p. 183 · Ex. 1

CHOOSE THE CORRECT ANSWER – اختر الإجابة الصحيحة

A. 0.625; terminating
B. 1.6; terminating
C. 0.58; terminating
D. $0.6\overline{25}$; repeating

2. $-\frac{3}{4}$

Book p. 183 · Ex. 2

CHOOSE THE CORRECT ANSWER – اختر الإجابة الصحيحة

A. −0.34; terminating
B. $-1.\overline{3}$; repeating
C. 0.75; terminating
D. −0.75; terminating

3. $\frac{2}{9}$

Book p. 183 · Ex. 3

CHOOSE THE CORRECT ANSWER – اختر الإجابة الصحيحة

(A) 0.29; terminating
(B) 4.5; terminating
(C) $0.\overline{2}$; not terminating
(D) 0.2; terminating

4. $-\frac{5}{6}$

Book p. 183 · Ex. 4

CHOOSE THE CORRECT ANSWER – اختر الإجابة الصحيحة

(A) $-0.\overline{83}$; not terminating
(B) $-0.8\overline{3}$; not terminating
(C) −1.2; terminating
(D) −0.56; terminating

5. $-\frac{4}{5}$

Book p. 183 · Ex. 5

CHOOSE THE CORRECT ANSWER – اختر الإجابة الصحيحة

(A) −0.8; terminating
(B) −1.25; terminating
(C) $-0.\overline{8}$; not terminating
(D) −0.45; terminating

6. $\frac{23}{50}$

Book p. 183 · Ex. 6

CHOOSE THE CORRECT ANSWER – اختر الإجابة الصحيحة

(A) 2.17; terminating
(B) $0.\overline{46}$; not terminating
(C) 0.23; terminating
(D) 0.46; terminating

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QUESTION
Q16

QUESTION Q16

Section A · Multiple Choice Question · 2–4 marks

LEARNING OUTCOME – الناتج التعليمي

Find the additive inverse of a rational number

إيجاد النظير الجمعي لعدد نسبي.

Lesson: Lesson 4-2 · Add Rational Numbers | **Book Page:** 195 | **Required Exercises:** 1–4

Find the additive inverse of each rational number. (Example 1)

1. $-\frac{1}{2}$ — Book p. 195 · Ex. 1

CHOOSE THE CORRECT ANSWER – اختر الإجابة الصحيحة

A $\frac{1}{2}$ B $-\frac{1}{2}$
C 2 D −2

2. 0.25 — Book p. 195 · Ex. 2

CHOOSE THE CORRECT ANSWER – اختر الإجابة الصحيحة

A 0.25 B 4
C −4 D −0.25

3. $\frac{9}{10}$ — Book p. 195 · Ex. 3

CHOOSE THE CORRECT ANSWER – اختر الإجابة الصحيحة

A $\frac{9}{10}$ B $\frac{10}{9}$
C $-\frac{9}{10}$ D $-\frac{10}{9}$

4. −0.4 — Book p. 195 · Ex. 4

CHOOSE THE CORRECT ANSWER – اختر الإجابة الصحيحة

A −0.4 B 0.4
C 2.5 D −2.5

QUESTION
Q17

QUESTION Q17

Section A · Multiple Choice Question · 2–4 marks

LEARNING OUTCOME – الناتج التعليمي

Add rational numbers

جمع الأعداد النسبية.

Lesson: Lesson 4-2 · Add Rational Numbers | **Book Page:** 195 | **Required Exercises:** 7–14

Add. Write in simplest form. (Examples 3–6)

7. $3\frac{5}{6} + \left(-1\frac{1}{6}\right)$ — Book p. 195 · Ex. 7

CHOOSE THE CORRECT ANSWER – اختر الإجابة الصحيحة

A) 5
B) $-2\frac{2}{3}$
C) $2\frac{2}{3}$
D) $2\frac{1}{6}$

8. $-13\frac{1}{4} + 4\frac{3}{4}$ — Book p. 195 · Ex. 8

CHOOSE THE CORRECT ANSWER – اختر الإجابة الصحيحة

A) -18
B) $-8\frac{1}{2}$
C) $8\frac{1}{2}$
D) $-9\frac{1}{2}$

9. $-\frac{2}{3} + 2\frac{3}{8}$ — Book p. 195 · Ex. 9

CHOOSE THE CORRECT ANSWER – اختر الإجابة الصحيحة

A) $1\frac{17}{24}$
B) $-3\frac{1}{24}$
C) $1\frac{1}{3}$
D) $3\frac{1}{24}$

10. $2\frac{1}{2} + \left(-\frac{1}{3}\right)$ — Book p. 195 · Ex. 10

CHOOSE THE CORRECT ANSWER – اختر الإجابة الصحيحة

A) $2\frac{5}{6}$
B) $1\frac{1}{6}$
C) $-2\frac{1}{6}$
D) $2\frac{1}{6}$

11. $-3.7+\frac{1}{4}$

Book p. 195 · Ex. 11

CHOOSE THE CORRECT ANSWER – اختر الإجابة الصحيحة

(A) −3.95 (B) 3.45
(C) −3.45 (D) −3.5

12. $\frac{1}{3}+4.1$

Book p. 195 · Ex. 12

CHOOSE THE CORRECT ANSWER – اختر الإجابة الصحيحة

(A) $4\frac{1}{3}$ (B) $4\frac{13}{30}$
(C) 4.13 (D) $3\frac{23}{30}$

13. $-1\frac{1}{4}+0.75+0.45$

Book p. 195 · Ex. 13

CHOOSE THE CORRECT ANSWER – اختر الإجابة الصحيحة

(A) $-\frac{1}{20}$ (B) $2\frac{9}{20}$
(C) −2.45 (D) $\frac{1}{20}$

14. $-0.25+3\frac{1}{6}+2\frac{1}{12}$

Book p. 195 · Ex. 14

CHOOSE THE CORRECT ANSWER – اختر الإجابة الصحيحة

(A) $5\frac{1}{2}$ (B) $4\frac{3}{4}$
(C) −5 (D) 5

QUESTION
Q18

QUESTION Q18

Section A · Multiple Choice Question · 2–4 marks

LEARNING OUTCOME – الناتج التعليمي

Subtract rational numbers by adding the additive inverse

طرح الأعداد النسبية بجمع النظير الجمعي.

Lesson: Lesson 4-3 · Subtract Rational Numbers | **Book Page:** 201 | **Required Exercises:** 7–12

Subtract. Write in simplest form. (Examples 1 and 2)

7. $-\frac{7}{8} - 2\frac{1}{6}$ — Book p. 201 · Ex. 7

CHOOSE THE CORRECT ANSWER – اختر الإجابة الصحيحة

(A) $-3\frac{1}{24}$ (B) $-1\frac{7}{24}$
(C) $3\frac{1}{24}$ (D) $-2\frac{1}{24}$

8. $-\frac{8}{15} - 3\frac{4}{5}$ — Book p. 201 · Ex. 8

CHOOSE THE CORRECT ANSWER – اختر الإجابة الصحيحة

(A) $-3\frac{4}{15}$ (B) $4\frac{1}{3}$
(C) $-3\frac{1}{3}$ (D) $-4\frac{1}{3}$

9. $-9\frac{7}{10} - \left(-4\frac{3}{5}\right)$ — Book p. 201 · Ex. 9

CHOOSE THE CORRECT ANSWER – اختر الإجابة الصحيحة

(A) $-14\frac{3}{10}$ (B) $5\frac{1}{10}$
(C) $-5\frac{1}{10}$ (D) $-5\frac{3}{10}$

10. $\frac{5}{6} - \left(-\frac{3}{4}\right)$ — Book p. 201 · Ex. 10

CHOOSE THE CORRECT ANSWER – اختر الإجابة الصحيحة

(A) $\frac{1}{12}$ (B) $1\frac{7}{12}$
(C) $-1\frac{7}{12}$ (D) $-\frac{1}{12}$

11. $-\frac{2}{3}-\left(-\frac{1}{2}\right)$

Book p. 201 · Ex. 11

CHOOSE THE CORRECT ANSWER – اختر الإجابة الصحيحة

A $-\frac{1}{6}$

B $-1\frac{1}{6}$

C $\frac{1}{6}$

D $-\frac{1}{5}$

12. $-\frac{7}{10}-\left(-\frac{4}{15}\right)$

Book p. 201 · Ex. 12

CHOOSE THE CORRECT ANSWER – اختر الإجابة الصحيحة

A $-\frac{29}{30}$

B $\frac{13}{30}$

C $-\frac{3}{5}$

D $-\frac{13}{30}$

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QUESTION
Q19

QUESTION Q19

Section A · Multiple Choice Question · 2–4 marks

LEARNING OUTCOME – الناتج التعليمي

Use the rules for multiplying integers to multiply rational numbers

استخدام قواعد ضرب الأعداد الصحيحة لضرب الأعداد النسبية.

Lesson: Lesson 4-4 · Multiply Rational Numbers | **Book Page:** 211 | **Required Exercises:** 1–6

Multiply. Write the product in simplest form. (Examples 1 and 2)

1. $-\frac{1}{2}\left(-\frac{4}{5}\right)$ Book p. 211 · Ex. 1

CHOOSE THE CORRECT ANSWER – اختر الإجابة الصحيحة

A $\frac{2}{5}$ B $-\frac{2}{5}$
C $\frac{5}{8}$ D $\frac{4}{7}$

2. $-\frac{3}{8}\left(-\frac{8}{9}\right)$ Book p. 211 · Ex. 2

CHOOSE THE CORRECT ANSWER – اختر الإجابة الصحيحة

A $-\frac{1}{3}$ B $\frac{27}{64}$
C $\frac{11}{17}$ D $\frac{1}{3}$

3. $-\frac{1}{4}\left(-\frac{4}{5}\right)$ Book p. 211 · Ex. 3

CHOOSE THE CORRECT ANSWER – اختر الإجابة الصحيحة

A $-\frac{1}{5}$ B $\frac{5}{16}$
C $\frac{1}{5}$ D $\frac{1}{4}$

4. $1\frac{4}{9}\left(-2\frac{4}{7}\right)$ Book p. 211 · Ex. 4

CHOOSE THE CORRECT ANSWER – اختر الإجابة الصحيحة

A $3\frac{5}{7}$ B $-3\frac{5}{7}$
C $-2\frac{16}{63}$ D $-3\frac{1}{7}$

5. $1\frac{1}{10}\left(-6\frac{7}{8}\right)$

Book p. 211 · Ex. 5

CHOOSE THE CORRECT ANSWER – اختر الإجابة الصحيحة

A $-7\frac{9}{16}$

B $7\frac{9}{16}$

C $-6\frac{7}{80}$

D $-8\frac{1}{16}$

6. $-5\frac{1}{4}\left(-4\frac{2}{3}\right)$

Book p. 211 · Ex. 6

CHOOSE THE CORRECT ANSWER – اختر الإجابة الصحيحة

A $-24\frac{1}{2}$

B $20\frac{1}{6}$

C $9\frac{11}{12}$

D $24\frac{1}{2}$

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QUESTION
Q20

QUESTION Q20

Section A · Multiple Choice Question · 2–4 marks

LEARNING OUTCOME – الناتج التعليمي

Use the rules for dividing integers to divide rational numbers

استخدام قواعد قسمة الأعداد الصحيحة لقسمة الأعداد النسبية.

Lesson: Lesson 4-5 · Divide Rational Numbers | **Book Page:** 220 | **Required Exercises:** 18–20

18. Find the Error A student is finding $-\frac{6}{7} \div \left(-\frac{5}{6}\right)$. Find the student's mistake and correct it. Book p. 220 · Ex. 18

$$-\frac{6}{7} \div \left(-\frac{5}{6}\right) = -\frac{7}{6} \cdot \left(-\frac{5}{6}\right) = \frac{35}{36}$$

CHOOSE THE CORRECT ANSWER – اختر الإجابة الصحيحة

(A) The student multiplied by the reciprocal of the dividend instead of the divisor; the correct work is $-\frac{6}{7} \cdot \left(-\frac{6}{5}\right) = 1\frac{1}{35}$

(B) The student forgot to change the negative signs to positive; the correct work is $\frac{7}{6} \cdot \frac{5}{6} = \frac{35}{36}$

(C) The student added the denominators instead of multiplying; the correct work is $-\frac{6}{7} + \left(-\frac{5}{6}\right) = -\frac{71}{42}$

(D) The student inverted both fractions; the correct work is $-\frac{7}{6} \cdot \left(-\frac{6}{5}\right) = \frac{7}{5}$

19. Make an Argument Which is greater, $20 \cdot \frac{3}{4}$ or $20 \div \frac{3}{4}$? Explain. Book p. 220 · Ex. 19

CHOOSE THE CORRECT ANSWER – اختر الإجابة الصحيحة

(A) $20 \cdot \frac{3}{4}$; multiplying a whole number by a fraction always increases its value.

(B) $20 \div \frac{3}{4}$; multiplying 20 by a number less than 1 results in a number less than 20, while dividing 20 by a number less than 1 results in a number greater than 20.

(C) Both expressions are equal because multiplication and division are inverse operations.

(D) $20 \cdot \frac{3}{4}$; division by a fraction less than 1 always results in a smaller number.

20. Persevere with Problems

Book p. 220 · Ex. 20

Find the missing fraction for each problem.

a. $-\frac{1}{4} \div \left(\frac{x}{y}\right) = -\frac{1}{2}$

b. $\frac{a}{b} \div \left(-\frac{2}{3}\right) = 1$

CHOOSE THE CORRECT ANSWER – اختر الإجابة الصحيحة

(A) a. $\frac{1}{2}$ b. $-\frac{2}{3}$

(B) a. $-\frac{1}{2}$ b. $\frac{2}{3}$

(C) a. $\frac{1}{8}$ b. $-\frac{3}{2}$

(D) a. 2 b. $\frac{2}{3}$

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SECTION B

FREE RESPONSE QUESTIONS

القسم الثاني: الأسئلة المقالية

Q21 Q22 Q23 Q24 Q25

5 outcome groups · 6–12 marks each · Larger solution spaces — show complete working

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QUESTION
Q21

QUESTION Q21

Section B · Free Response Question · 6–12 marks

LEARNING OUTCOME – الناتج التعليمي

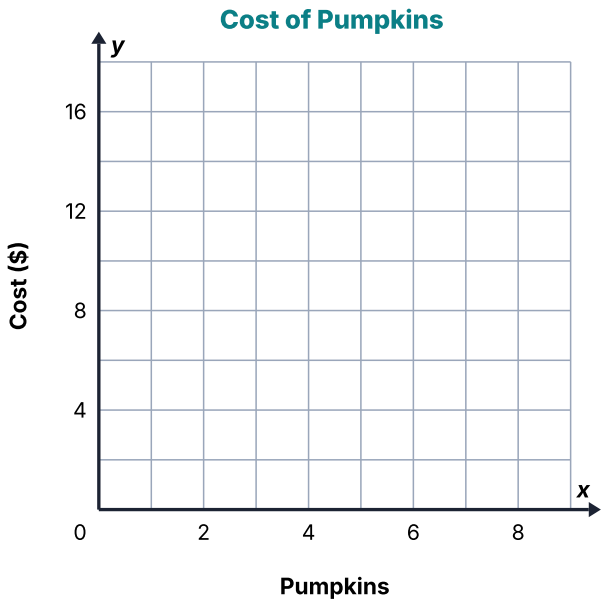
Determine if a relationship is proportional by analyzing its graph

تحديد ما إذا كانت العلاقة تناسبية من خلال تحليل تمثيلها البياني.

Lesson: Lesson 1-4 · Graphs of Proportional Relationships | **Book Page:** 39 | **Required Exercises:** 1–3

1. The cost of pumpkins is shown in the table. Determine whether the cost of a pumpkin is proportional to the number bought by graphing the relationship on the coordinate plane. Explain. (Example 1) Book p. 39 · Ex. 1

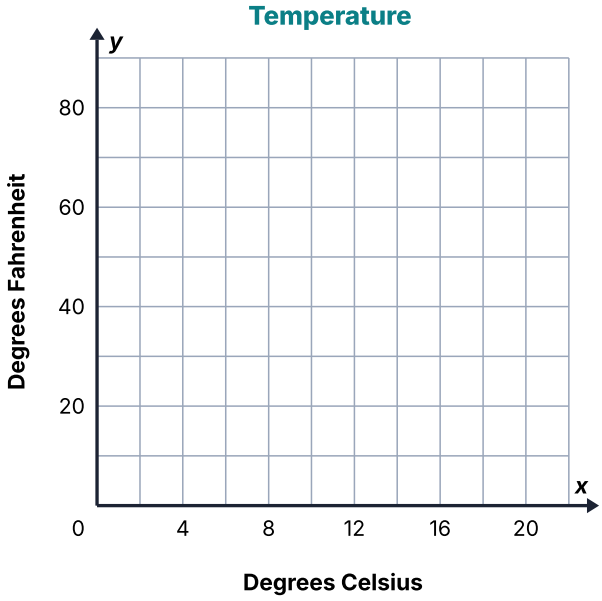
Number of Pumpkins	0	1	2	3	4
Cost ($)	0	4	8	12	16



Answer _____

2. The table shows temperatures in degrees Celsius and their equivalent temperatures in degrees Fahrenheit. Determine whether the temperature in degrees Fahrenheit is proportional to the temperature in degrees Celsius by graphing the relationship on the coordinate plane. Explain. (Example 2) Book p. 39 · Ex. 2

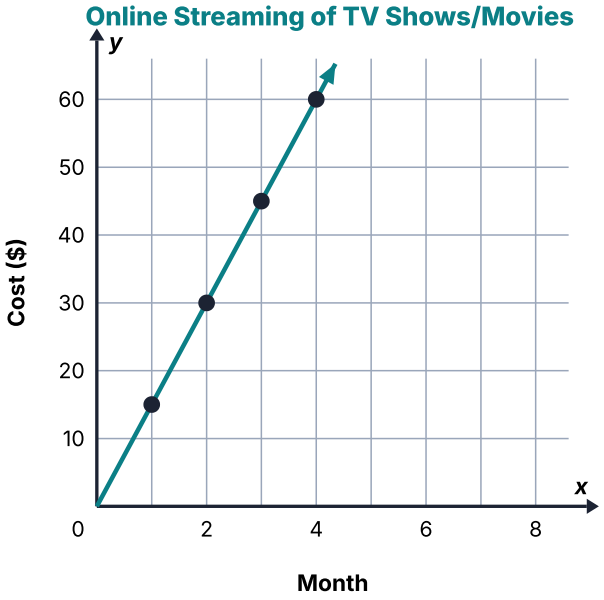
Celsius (degrees)	0	5	10	15	20
Fahrenheit (degrees)	32	41	50	59	68



Answer _____

3. The total cost of online streaming is proportional to the number of months. What is the constant of proportionality? (Example 3)

Book p. 39 · Ex. 3



Answer _____

QUESTION
Q22

QUESTION Q22

Section B · Free Response Question · 6–12 marks

Outcome 1 of 2

LEARNING OUTCOME – الناتج التعليمي

Use proportional relationships to find the amount to pay for a tip and the amount of markup on items

استخدام العلاقات التناسبية لإيجاد المبلغ الواجب دفعه كإكرامية (بقشيش) ومقدار الزيادة (هامش الربح) على السلع.

Outcome 2 of 2

LEARNING OUTCOME – الناتج التعليمي

Use proportional relationships to find the amount of discount or markdown

استخدام العلاقات التناسبية لإيجاد مقدار الخصم أو التخفيض في السعر.

Lesson: Lesson 2-3 · Tips and Markups | Lesson 2-4 · Discounts

Book Page: 89, 97

Required Exercises: p.89 6–9, p.97 1–5

Part A **Book Page 89** · Exercises 6–9 · Lesson 2-3 · Tips and Markups

6. The wholesale cost of a bicycle is $98.75. The markup for the bicycle is 33.3%. Find the selling price of the bicycle. Round to the nearest cent. (Example 2)

Book p. 89 · Ex. 6

Answer _____

7. The wholesale cost for a purse in a department store is $12.50. The store plans to mark up the purse by 140%. What will be the selling price of the purse? Round to the nearest cent. (Example 2)

Book p. 89 · Ex. 7

Answer _____

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8. Keri is making doll clothes for a holiday craft show. The wholesale cost of the materials for one outfit is $9.38. If she sells an outfit for $15, what is the percent of markup? Round to the nearest percent. (Example 3)

Book p. 89 · Ex. 8

Answer _____

9. A pet store sells a large dog kennel for $98.50. The wholesale cost of the kennel is $63.55. What is the percent of markup? Round to the nearest percent. (Example 3)

Book p. 89 · Ex. 9

Answer _____

Part B Book Page 97 · Exercises 1–5 · Lesson 2-4 · Discounts

Find the sale price to the nearest cent. Use any strategy. (Example 1)

1. $140 coat; 10% discount

Book p. 97 · Ex. 1

2. $80 boots; 25% discount

Book p. 97 · Ex. 2

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3. $325 tent; 15% discount Book p. 97 · Ex. 3

4. A toy store is having a sale. Book p. 97 · Ex. 4
A video game system has an original price of $99. It is on sale for 40% off the original price. Find the sale price of the game system. Round to the nearest cent. (Example 1)

Answer _____

5. A yearly coffee club subscription costs $65. Avery received an offer for 62% off the subscription cost. What is the sale price of the subscription? Round to the nearest cent. (Example 1) Book p. 97 · Ex. 5

Answer _____

QUESTION
Q23

QUESTION Q23

Section B · Free Response Question · 6–12 marks

Outcome 1 of 2

LEARNING OUTCOME – النتاج التعليمي

Use different methods, including algebra tiles, number lines, or absolute value, to add integers

استخدام طرائق مختلفة، منها البلاطات الجبرية وخطوط الأعداد والقيمة المطلقة، لجمع الأعداد الصحيحة.

Outcome 2 of 2

LEARNING OUTCOME – النتاج التعليمي

Use different methods, including algebra tiles, number lines, or the additive inverse, to subtract integers

استخدام طرائق مختلفة، منها البلاطات الجبرية وخطوط الأعداد والنظير الجمعي، لطرح الأعداد الصحيحة.

Lesson: Lesson 3-1 · Add Integers | Lesson 3-2 · Subtract Integers

Book Page: 137, 147

Required Exercises: p.137 1–6, p.147 2–7

Part A **Book Page 137** · Exercises 1–6 · Lesson 3-1 · Add Integers

Add. (Examples 1, 4, and 6)

1. $-3 + (-8)$ Book p. 137 · Ex. 1

2. $-11 + (-13)$ Book p. 137 · Ex. 2

3. $9 + (-35)$ Book p. 137 · Ex. 3

4. $-28 + 14$ Book p. 137 · Ex. 4

5. Book p. 137 · Ex. 5

$-22 + (-10) + 15$

6. $18 + (-12) + 5$ Book p. 137 · Ex. 6

Part B **Book Page 147** · Exercises 2–7 · Lesson 3-2 · Subtract Integers

Subtract. (Examples 1 and 2)

2. $-20 - 10$ Book p. 147 · Ex. 2

3. $13 - (-63)$ Book p. 147 · Ex. 3

4. $28 - 14$ Book p. 147 · Ex. 4

5. $-10 - 0$ Book p. 147 · Ex. 5

6. $-33 - 33$ Book p. 147 · Ex. 6

7. $-18 - (-12)$ Book p. 147 · Ex. 7

QUESTION
Q24

QUESTION Q24

Section B · Free Response Question · 6–12 marks

LEARNING OUTCOME – الناتج التعليمي

Convert fractions to decimal equivalents using division

تحويل الكسور إلى الكسور العشرية المكافئة لها باستخدام القسمة.

Lesson: Lesson 4-1 · Rational Numbers

Book Page: 178, 183

Required Exercises: p.178 Learn, p.183 1–6

Part A **Book Page 178** · Exercises Learn · Lesson 4-1 · Rational Numbers (Learn · Module 4)

Learn Rational Numbers Written as Decimals

Book p. 178 · Learn

Any fraction can be expressed as a decimal by dividing the numerator by the denominator. The decimal form of a rational number either terminates in 0s or eventually repeats. **Repeating decimals** are decimals in which 1 or more digits repeat and can be represented using bar notation. In **bar notation**, a bar is drawn only over the digit(s) that repeat.

The following decimals are written in bar notation.

$-0.44444... = -0.\overline{4}$ The digit 4 repeats.

$2.4343... = 2.\overline{43}$ The digits 43 repeat.

T **Complete the table by writing each decimal using bar notation.** Book p. 178

Decimal	Bar Notation
0.11111.....	
0.61111.....	
0.616161.....	
6.160000.....	
6.1611611611.....	

SHOW YOUR WORK – مساحة الحل

Every decimal can be considered a repeating decimal. Decimals with a repeating digit of zero are also called **terminating decimals**, because the repeating zeros in a terminating decimal are usually truncated, or dropped. For example, the terminating decimal $0.250\overline{0}$ is written as 0.25. The decimal $0.250\overline{0}$ can be considered repeating because the digit 0 repeats.

Pause and Reflect

Book p. 178

Are you ready to move on to the Example? If yes, what have you learned that you think will help you? If no, what questions do you still have? How can you get those questions answered?

Part B **Book Page 183** · Exercises 1–6 · Lesson 4-1 · Rational Numbers

Write each fraction as a decimal. Determine if the decimal is a terminating decimal. (Examples 1 and 2)

1. $\frac{5}{8}$ Book p. 183 · Ex. 1

2. $-\frac{3}{4}$ Book p. 183 · Ex. 2

3. $\frac{2}{9}$ Book p. 183 · Ex. 3

4. $-\frac{5}{6}$ Book p. 183 · Ex. 4

5. $-\frac{4}{5}$

Book p. 183 · Ex. 5

6. $\frac{23}{50}$

Book p. 183 · Ex. 6

QUESTION
Q25

QUESTION Q25

Section B · Free Response Question · 6–12 marks

LEARNING OUTCOME – الناتج التعليمي

Use the rules for dividing integers to divide rational numbers

استخدام قواعد قسمة الأعداد الصحيحة لقسمة الأعداد النسبية.

Lesson: Lesson 4-5 · Divide Rational Numbers | **Book Page:** 219 | **Required Exercises:** 1–6

Divide. Write your answer in simplest fraction form. (Examples 1 and 2)

1. $-\frac{6}{7} \div \frac{3}{14}$ Book p. 219 · Ex. 1

2. $-\frac{3}{4} \div \left(-\frac{1}{2}\right)$ Book p. 219 · Ex. 2

3. $\frac{2}{3} \div \left(-\frac{4}{9}\right)$ Book p. 219 · Ex. 3

4. $-\frac{4}{7} \div \frac{8}{9}$ Book p. 219 · Ex. 4

5. $-\frac{3}{5} \div \left(-\frac{3}{4}\right)$

Book p. 219 · Ex. 5

6. $-5\frac{3}{4} \div \left(2\frac{1}{16}\right)$

Book p. 219 · Ex. 6

Extra Working Space

مساحة إضافية للحل

SHOW YOUR WORK – مساحة الحل

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