TEST2-AQA-83001F-QP-JUN25 - Student Feedback (Mastery)

Student: Test User

Overall Score: 61/80 (76.3%)
Grade: 4
Grade boundaries: Grade boundaries 2024-26 · AQA · Foundation
Assessment Tier: Foundation

AI Study Review
Scan this QR code to load your full exam data into an AI chatbot (ChatGPT, Claude, or Gemini) for personalised revision help.

Master it. This sheet focuses on the questions where you lost the most marks. Study the worked example, then complete the practice tasks in the spaces provided - they get a little harder each time.

Q26 · Algebra

You scored 0/4

Question

A rectangle (not drawn accurately) has width (x + 2) cm and height (x – 5) cm. The area of the rectangle is 120 cm². Work out the value of x.

What you wrote (transcription)

Based on the provided image, here is the OCR of the student's handwritten response for Question 26:

Working (all crossed out):

- [scribbled out $5 + 5 = 10$]
- [scribbled out $2 + 2 = 4$]
- [scribbled out $10 - 4 = 6$]
- [scribbled out $120 - 6 = 114$]
- [scribbled out division: $6\overline{)1140}$ with 028 on top]

Answer line:

$x =$ [scribbled out] 7

Where it went wrong

You tried to do trial-and-error arithmetic with numbers rather than forming an algebraic equation for the area. You need to multiply the two algebraic side lengths, expand the brackets, set equal to 120, and solve the resulting quadratic equation.

Worked example

1. Set up the area equation by multiplying width and height: $(x + 2)(x - 5) = 120$
2. **Expand** the double brackets: $x^2 - 5x + 2x - 10 = 120 \implies x^2 - 3x - 10 = 120$
3. Rearrange into the standard form $ax^2 + bx + c = 0$: $x^2 - 3x - 130 = 0$
4. **Factorise** the quadratic: $(x - 13)(x + 10) = 0$
5. Solve for x: $x = 13$ or $x = -10$. Since a side length must be positive, $x = 13$.

Your turn (each task gets a little harder)

Solve **Fill in the blanks**

Complete the steps to solve $(x + 1)(x - 4) = 24$:

1. Expand: $x^2 - 4x + x - 4 = 24 \implies x^2 - __x - 4 = 24$
2. Rearrange to standard form: $x^2 - 3x - __ = 0$
3. Factorise: $(x - 7)(x + __) = 0$
4. Positive length solution: $x = __$

3 | 28 | 4 | 7 | -3 | 24

Find **Fill in the blanks**

A rectangle has width $(x + 3)$ cm and height $(x - 2)$ cm. Its area is 14 cm^2.

Expanding gives $x^2 + x - 6 = 14$.

In standard form: $x^2 + x - __ = 0$.

Factorised: $(x + 5)(x - __) = 0$.

Therefore, the positive value of x is __.

Find **Your turn**

A rectangle has a width of $(x + 4)$ cm and a height of $(x - 1)$ cm.

The area of the rectangle is 36 cm^2.

Find the value of x.

Calculate **Challenge**

A right-angled triangle has a base of $(x + 1)$ cm and a perpendicular height of $(2x - 4)$ cm.

The area of the triangle is 21 cm^2.

Calculate the value of x.

Q7(a) · Number

You scored 0/3

Question

Vinyl records cost £25 each. Offer: Buy one and get another for half price. Arif wants to buy two vinyl records. He saves £8 every Saturday. Assume the offer is permanent. How many Saturdays does Arif need to save for? You must show your working.

What you wrote (transcription)

[scribbled out $25 \div 8 =$]

$24 \div 8 = 3$ [scribbled out + 1 rem]

$25 - 24 = 1$

$3 + 1 = 4$

Answer: 4

No response detected

Where it went wrong

You calculated the savings needed for a single record (£25) instead of finding the total cost for two records with the 'buy one get one half price' deal applied.

Worked example

1 Find the cost of the second record: $£25 \div 2 = £12.50$

2 Find the total cost of two records: $£25 + £12.50 = £37.50$

3 Divide the total cost by the weekly savings: $£37.50 \div 8 = 4.6875$

4 Round **up** to the next whole Saturday because Arif cannot save a fraction of a week: 5 Saturdays

Your turn (each task gets a little harder)

Calculate **Fill in the blanks**

Board games cost £30 each. Deal: Buy one, get one half price.

1. Cost of second game = $£30 \div 2 = £$__
2. Total cost for two games = $£30 + £15 = £$__
3. Chloe saves £10 per week: $£45 \div 10 =$ __
4. Number of full weeks Chloe must save = __

15 | 45 | 4.5 | 5 | 4 | 60

Work out **Fill in the blanks**

Concert tickets cost £40 each. Deal: Buy one, get a second ticket for half price.
Total cost for two tickets = £ _____ .
If Sam saves £9 every week, ___ ÷ 9 = 6.66..., so Sam needs to save for _____ weeks.

Calculate **Your turn**

Books cost £16 each. Special offer: Buy one, get a second book for half price.
Maya saves £5 each week.
Calculate how many weeks she must save to buy two books.

Calculate **Challenge**

Hoodies cost £32 each. Special offer: Buy two hoodies and get a third hoodie for half price.
Liam saves £15 every week.
Calculate the number of weeks Liam needs to save to buy three hoodies.

Q16(a) · Algebra

You scored 0/3

Question

The formula d = 800/w where d represents the number of days to complete a job and w represents the number of workers needed. Assume the job needs completing in 20 days. How many workers are needed?

What you wrote (transcription)

Question 16(a)

Student's handwritten response:

Working:

$20 \times 800 = 16000$

Answer line:

Answer 16000

Where it went wrong

You multiplied the numbers (20×800) instead of substituting $d = 20$ into the denominator formula $d = \frac{800}{w}$ and rearranging by dividing.

Worked example

1 Substitute $d = 20$ into the formula: $20 = \frac{800}{w}$

2 Multiply both sides by w: $20w = 800$

3 Divide both sides by 20 to isolate w: $w = \frac{800}{20}$

4 **Calculate** the final value: $w = 40$

Your turn (each task gets a little harder)

Solve **Fill in the blanks**

The formula is $t = \frac{600}{s}$, where t is time and s is speed. Find s when $t = 30$:

1. Substitute: $30 = \frac{600}{__}$
2. Rearrange: $s = \frac{600}{__}$
3. Calculate: $s = __$

s | 30 | 20 | 18000 | t

Work out **Fill in the blanks**

Given the formula $T = \frac{120}{n}$, find n when $T = 15$.
Rearranging gives $n = \frac{120}{__} = __$.

Find **Your turn**

The formula for the time t (in hours) to paint a building is $t = \frac{90}{p}$, where p is the number of painters.

Find the number of painters needed to complete the job in $6\ \text{hours}$.

Calculate **Challenge**

The force F (in Newtons) between two magnets is given by the formula $F = \frac{400}{r^2}$, where r is the distance between them in centimetres.

Calculate the distance r when the force is $16\ \text{N}$.