EGUSD Paraeducator Math Assessment Study Guide

📚 Table of Contents

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This study guide is organized by topic with explanations, tips for review, and practice problems. An Answer Key is at the end.

📌 Basic Operations

Addition/Subtraction

- Practice with whole numbers, decimals, and fractions.
- Pay attention to borrowing and carrying.

Multiplication/Division

- Know your multiplication facts.
- Practice long division and multiplying multi-digit numbers.

📌 Basic Operations

Practice:

1. 532 + 289 =
2. 705 – 298 =
3. 125 + 87 + 243 =
4. 1,250 – 985 =
5. 72 ÷ 8 =
6. 144 ÷ 12 =
7. 18 × 5 =
8. 34 × 7 =
9. 5.7 + 8.3 =
10. 12.6 – 4.9 =

🧮 Fractions, Decimals, & Percents

Convert Between Fractions, Decimals, and Percents

- Ex: ¼ = 0.25 = 25%
- Practice converting in both directions.

Percent Problems

- **Find a percentage of a number**: e.g. 15% of $80 = $12
- **Percent increase/decrease**
- **Simple Interest**: $I=P\times R\times T$

"What Percent of" Questions

- Ex: 3 is what percent of 15?

Practice:

1. Convert ⅔ to a decimal.
2. Convert 0.75 to a fraction.
3. What is 15% of 120?
4. 20 is what percent of 80?
5. Increase $200 by 25%.
6. Decrease $150 by 30%.
7. Convert ⅝ to a percent.
8. What is 40% of 250?
9. A shirt is $40, marked down 10%. What's the sale price?
10. What is the decimal equivalent of 7/10?

📐 Measurement

Distance/Speed/Time Problems

- Use formula: Distance = Rate × Time

Elapsed Time

- Be comfortable adding/subtracting hours and minutes.

Area & Perimeter

- **Square/Rectangle**: Area = length × width; Perimeter = 4 × side (for square)

Customary Units

- Practice adding/subtracting feet/inches or hours/minutes.

Practice

1. Convert 5 feet 9 inches to inches.
2. Add 3 ft 6 in + 2 ft 10 in.
3. Subtract: 7 ft 8 in – 4 ft 5 in.
4. Area of a rectangle: 10 in by 6 in.
5. Perimeter of a square with side 9 cm.
6. Distance if speed = 60 mph and time = 3 hours.
7. Speed if distance = 120 miles in 2 hours.
8. Time if distance = 180 miles and speed = 60 mph.
9. Add: 1 hour 45 minutes + 2 hours 30 minutes.
10. Subtract: 5 hours 20 minutes – 2 hours 50 minutes.

📊 Statistics

Mean (Average)

- Add all values and divide by the number of values.

Interpreting Tables & Graphs

- Find specific values from data.
- Estimate based on graphs.

Percentage from a Table

- Ex: 15 cans out of 90 total → 1590=0.167=16.7%\frac{15}{90} = 0.167 = 16.7\%9015=0.167=16.7%

Practice:

1. Average of: 70, 85, 90, 100.
2. Average of: 60, 75, 80.
3. 12 is what percent of 60?
4. Increase from 40 to 50: % increase?
5. Decrease from 100 to 75: % decrease?
6. If 24 out of 80 students like pizza, what % is that?
7. Class scores: 88, 92, 85, 90, 95 – what's the mean?
8. Median of: 13, 17, 15, 21, 19.
9. Mode of: 8, 10, 8, 12, 10, 10.
10. What is the range of: 55, 65, 70, 75, 80?

➗ Proportions & Ratios

Find Equivalent Fractions

Set Up and Solve Proportions

- Cross-multiply to solve.

Unit Rate & Proportions

- Ex: $5 for 2 lbs → $2.50/lb → $25 for 10 lbs

Practice:

1. $\frac{3}{5} = \frac{x}{20}$
2. Which is equivalent to $\frac{2}{4}$? A) $\frac{3}{5}$, B) $\frac{1}{2}$, C) $\frac{4}{6}$
3. $5 for 2 lbs — how much for 6 lbs?
4. $15 for 3 notebooks — price for 5 notebooks?
5. If 4 pens cost $3.20, what's the cost of 10 pens?
6. Solve: $\frac{8}{x} = \frac{2}{3}$
7. Is 3:6 the same as 1:2?
8. Write a ratio of 6 oranges to 10 apples.
9. Solve: $5x = 45$
10. $\frac{x}{9} = \frac{3}{6}$

🔢 **Algebra**

Translating Words to Equations

- “One added to three times a number is 25” → 3x+1=253x + 1 = 253x+1=25

Simplifying Expressions

- Follow order of operations: PEMDAS (Parentheses, Exponents, Multiply/Divide, Add/Subtract)

Solving for Variables

- Use inverse operations to isolate the variable.

Practice:

1. Translate: "Six more than twice a number is 20."
2. Solve: 2x + 3 = 15
3. Solve: 5x = 25
4. Simplify: 6 + 3 × 4
5. What's x? x − 7 = 11
6. Solve: x ÷ 2 = 9
7. What is the first step in solving: 3x – 5 = 10
8. Solve: 8x + 4 = 20
9. Combine like terms: 4x + 2 + 3x + 5
10. Factor: x2 + 5x

📉 Graphs & Coordinates

Plot Points

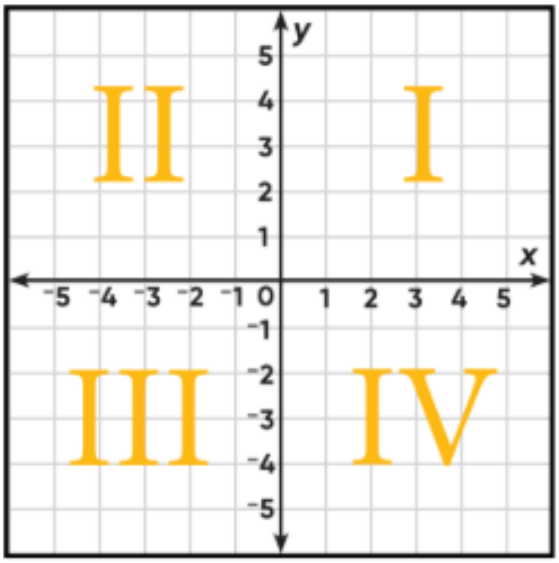
- Know how to read coordinates: (x, y)

Match Equations to Graphs

- Understand linear patterns.

Compare Graph Values

- Find the highest, lowest, and differences.



Practice:

1. Plot (4, –2)
2. Which point is in Quadrant II? A) (3, 2) B) (–2, 3) C) (–3, –2)
3. What's the y-intercept of y = 2x + 5?
4. Identify the slope in y = 3x – 4
5. What's the rule in the table: x = 1, 2, 3 → y = 2, 4, 6
6. From graph: What's the value of y when x = 0?
7. Which is a solution to y = x – 3? A) (4, 1) B) (5, 3)
8. Find the coordinates: right 2, down 5
9. What is the x-value when y = 0 in y = –2x + 4?
10. Which graph represents a constant rate of change?

✅ Tips for Test Day

- **Show all your work**.
- **Double-check calculations**.
- **Use process of elimination** for multiple-choice questions.
- **Don't rush** — stay calm and manage your time.

✅ Answer Key

📌 Basic Operations

1. 821
2. 407
3. 455
4. 265
5. 9
6. 12
7. 90
8. 238
9. 14
10. 7.7

🧮 Fractions, Decimals, Percents

1. 0.666…
2. ¾
3. 18
4. 25%
5. $250
6. $105
7. 62.5%
8. 100
9. $36
10. 0.7

📐 Measurement

1. 69 in
2. 6 ft 4 in
3. 3 ft 3 in
4. 60 in²
5. 36 cm
6. 180 miles
7. 60 mph
8. 3 hours
9. 4 hours 15 minutes
10. 2 hours 30 minutes

📊 Statistics

1. 86.25
2. 71.67
3. 20%
4. 25% increase
5. 25% decrease
6. 30%
7. 90
8. 17
9. 10
10. 25

➗ Proportions & Ratios

1. x = 12
2. B) 12\frac{1}{2}21
3. $15
4. $25
5. $8
6. x = 12
7. Yes
8. 6:10 or 3:5

9. x = 9
10. x = 4.5

🔢 Algebra

1. 2x+6=202x + 6 = 202x+6=20
2. x = 6
3. x = 5
4. 18
5. x = 18
6. x = 18
7. Add 5
8. x = 2
9. 7x + 7
10. x(x + 5)

📉 Graphs & Coordinates

1. Plotted at right 4, down 2
2. B) (–2, 3)
3. 5
4. 3
5. y = 2x
6. Where x = 0 → check graph
7. A) (4, 1)
8. (2, –5)
9. x = 2
10. A straight line graph