

# TSI A2 Mathematics Practice Test (Sample)

## Study Guide



**Everything you need from our exam experts!**

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# Introduction

Preparing for a certification exam can feel overwhelming, but with the right tools, it becomes an opportunity to build confidence, sharpen your skills, and move one step closer to your goals. At Examzify, we believe that effective exam preparation isn't just about memorization, it's about understanding the material, identifying knowledge gaps, and building the test-taking strategies that lead to success.

This guide was designed to help you do exactly that.

Whether you're preparing for a licensing exam, professional certification, or entry-level qualification, this book offers structured practice to reinforce key concepts. You'll find a wide range of multiple-choice questions, each followed by clear explanations to help you understand not just the right answer, but why it's correct.

The content in this guide is based on real-world exam objectives and aligned with the types of questions and topics commonly found on official tests. It's ideal for learners who want to:

- Practice answering questions under realistic conditions,
- Improve accuracy and speed,
- Review explanations to strengthen weak areas, and
- Approach the exam with greater confidence.

We recommend using this book not as a stand-alone study tool, but alongside other resources like flashcards, textbooks, or hands-on training. For best results, we recommend working through each question, reflecting on the explanation provided, and revisiting the topics that challenge you most.

**Remember:** successful test preparation isn't about getting every question right the first time, it's about learning from your mistakes and improving over time. Stay focused, trust the process, and know that every page you turn brings you closer to success.

Let's begin.

# How to Use This Guide

**This guide is designed to help you study more effectively and approach your exam with confidence. Whether you're reviewing for the first time or doing a final refresh, here's how to get the most out of your Examzify study guide:**

## **1. Start with a Diagnostic Review**

**Skim through the questions to get a sense of what you know and what you need to focus on. Your goal is to identify knowledge gaps early.**

## **2. Study in Short, Focused Sessions**

**Break your study time into manageable blocks (e.g. 30 - 45 minutes). Review a handful of questions, reflect on the explanations.**

## **3. Learn from the Explanations**

**After answering a question, always read the explanation, even if you got it right. It reinforces key points, corrects misunderstandings, and teaches subtle distinctions between similar answers.**

## **4. Track Your Progress**

**Use bookmarks or notes (if reading digitally) to mark difficult questions. Revisit these regularly and track improvements over time.**

## **5. Simulate the Real Exam**

**Once you're comfortable, try taking a full set of questions without pausing. Set a timer and simulate test-day conditions to build confidence and time management skills.**

## **6. Repeat and Review**

**Don't just study once, repetition builds retention. Re-attempt questions after a few days and revisit explanations to reinforce learning. Pair this guide with other Examzify tools like flashcards, and digital practice tests to strengthen your preparation across formats.**

**There's no single right way to study, but consistent, thoughtful effort always wins. Use this guide flexibly, adapt the tips above to fit your pace and learning style. You've got this!**

## Questions

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1. Which equation is in point-slope form with slope -2 through point (3, 5)?
- A.  $y - 5 = -2(x - 3)$
  - B.  $y - 5 = -2x - 6$
  - C.  $y = -2(x - 3) - 5$
  - D.  $y + 5 = -2(x - 3)$
2. In the equation  $ab = c$ , solve for c.
- A.  $ab$
  - B.  $a+b$
  - C.  $a-b$
  - D.  $a/b$
3. Which equation is in point-slope form with slope 3 through (4, 2)?
- A.  $y - 2 = 3(x - 4)$
  - B.  $y = 3x + 14$
  - C.  $y - 4 = 3(x - 2)$
  - D.  $y = 3x - 4$
4. Convert 0.36 to a fraction in simplest form.
- A.  $36/100$
  - B.  $9/25$
  - C.  $3/10$
  - D.  $18/50$
5. What is the degree of the polynomial  $3x^3 + 2x^5 + x$ ?
- A. 3
  - B. 5
  - C. 2
  - D. 1
6. Congruent figures are defined as being what?
- A. the shape is exactly equal in shape and size
  - B. equal in area only
  - C. similar but not same size
  - D. equal in color

**7. Which description best defines a literal equation?**

- A. An equation that has more than one variable**
- B. An equation with only numbers**
- C. An equation with a single variable**
- D. An equation that has no variables**

**8. Convert  $2\frac{3}{5}$  to an improper fraction.**

- A.  $\frac{11}{5}$**
- B.  $\frac{13}{5}$**
- C.  $\frac{12}{5}$**
- D.  $\frac{15}{5}$**

**9. What is the x-intercept of a line?**

- A. The point where the line crosses the x-axis**
- B. The point where the line crosses the y-axis**
- C. The slope of the line**
- D. The y-coordinate of the origin**

**10. Which expression correctly represents slope?**

- A. Rise over Run**
- B. Run over Rise**
- C. Delta X over Delta Y**
- D. X over Y**

## Answers

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1. A
2. A
3. A
4. B
5. B
6. A
7. A
8. B
9. A
10. A

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## **Explanations**

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1. Which equation is in point-slope form with slope -2 through point (3, 5)?

**A.  $y - 5 = -2(x - 3)$**

B.  $y - 5 = -2x - 6$

C.  $y = -2(x - 3) - 5$

D.  $y + 5 = -2(x - 3)$

In point-slope form, a line through a known point  $(x_1, y_1)$  with slope  $m$  is written as  $y - y_1 = m(x - x_1)$ . Here,  $m$  is -2 and the point is (3, 5), so the equation should be  $y - 5 = -2(x - 3)$ . This directly encodes both the slope and the exact point the line passes through. That structure is what makes it the correct form. The other expressions either don't keep the left side as  $y - y_1$  or don't place the point inside the parentheses in the required way, so they don't represent the line that passes through (3, 5) with slope -2. For example, expanding or rearranging can give lines like  $y = -2x + 11$ ,  $y = -2x + 1$ , or  $y = -2x - 1$ , which have the same slope but pass through different points.

2. In the equation  $ab = c$ , solve for  $c$ .

**A.  $ab$**

B.  $a + b$

C.  $a - b$

D.  $a/b$

Solving for  $c$  means express  $c$  in terms of the other variables. The equation  $ab = c$  already states that  $c$  is the product of  $a$  and  $b$ , so the correct form is  $c = ab$ . This matches the given relationship exactly. The other expressions would describe different relationships:  $a + b$  would be the sum,  $a - b$  the difference, and  $a/b$  the quotient. Since the equation specifies  $c$  as the product  $ab$ , only  $c = ab$  is correct.

3. Which equation is in point-slope form with slope 3 through (4, 2)?

**A.  $y - 2 = 3(x - 4)$**

B.  $y = 3x + 14$

C.  $y - 4 = 3(x - 2)$

D.  $y = 3x - 4$

Point-slope form uses a known point and the slope:  $y - y_1 = m(x - x_1)$ . With slope 3 and the point (4, 2), plug in  $y_1 = 2$ ,  $x_1 = 4$ ,  $m = 3$  to get  $y - 2 = 3(x - 4)$ . This is exactly the point-slope form for a line through (4, 2) with slope 3. If you expand, you'd get  $y = 3x - 10$ , but the expression shown is already in the requested form. The other expressions don't fit because they either use a different point or are written in a different form, e.g.,  $y = 3x + 14$  would not pass through (4, 2);  $y - 4 = 3(x - 2)$  would go through (2, 4); and  $y = 3x - 4$  would give  $y = 8$  when  $x = 4$ , not 2.

**4. Convert 0.36 to a fraction in simplest form.**

**A. 36/100**

**B. 9/25**

**C. 3/10**

**D. 18/50**

The key idea is turning a decimal into a fraction and then simplifying. 0.36 means 36 hundredths, so it can be written as  $\frac{36}{100}$ . To reduce, find a common factor of 36 and 100; both are divisible by 4, giving  $\frac{9}{25}$ . Since 9 and 25 have no common factors other than 1,  $\frac{9}{25}$  is already in simplest form. This fraction equals 0.36. Other representations like  $\frac{36}{100}$  are the unreduced form, and  $\frac{18}{50}$  is the same value but not simplified, while  $\frac{3}{10}$  equals 0.3, not 0.36.

**5. What is the degree of the polynomial  $3x^3 + 2x^5 + x$ ?**

**A. 3**

**B. 5**

**C. 2**

**D. 1**

The degree of a polynomial is the highest power of  $x$  that appears with a nonzero coefficient. In  $3x^3 + 2x^5 + x$ , the exponents are 3, 5, and 1. The largest is 5, and the coefficient of  $x^5$  is 2 (nonzero), so the degree is 5. The other terms have lower powers and do not affect the degree.

**6. Congruent figures are defined as being what?**

**A. the shape is exactly equal in shape and size**

**B. equal in area only**

**C. similar but not same size**

**D. equal in color**

Congruent figures are exactly the same shape and size. You can move one onto the other using only slides, rotations, or flips—no stretching or resizing—so every corresponding side and every corresponding angle matches. In other words, there is a rigid motion that maps one figure onto the other, preserving lengths and angles. This is why having equal area or being similar (same shape, possibly different size) does not by itself guarantee congruence, and why color isn't part of the definition.

**7. Which description best defines a literal equation?**

- A. An equation that has more than one variable**
- B. An equation with only numbers**
- C. An equation with a single variable**
- D. An equation that has no variables**

A literal equation is an equation that uses letters to represent variables and involves more than one variable. This kind of equation is meant to be rearranged to solve for any one variable in terms of the others. For example,  $s = vt$  has two variables, so you can solve for  $v$  as  $v = s/t$  or for  $t$  as  $t = s/v$ . That multi-variable, letter-based setup is what distinguishes a literal equation from a purely numeric equation or one with only a single variable.

**8. Convert  $2 \frac{3}{5}$  to an improper fraction.**

- A.  $11/5$**
- B.  $13/5$**
- C.  $12/5$**
- D.  $15/5$**

Converting a mixed number to an improper fraction means keeping the same overall value by turning the whole and fractional parts into a single numerator over the original denominator. Do this by multiplying the whole number by the denominator and then adding the numerator. For  $2 \frac{3}{5}$ , do  $2 \times 5 = 10$ , then add 3 to get 13. Put that over the original denominator 5, giving  $13/5$ . This is the correct form because it represents the same amount as 2 and  $3/5$ . The other possibilities reflect different fractional parts:  $11/5$  would come from  $2 \frac{1}{5}$ ,  $12/5$  from  $2 \frac{2}{5}$ , and  $15/5$  equals 3.

**9. What is the x-intercept of a line?**

- A. The point where the line crosses the x-axis**
- B. The point where the line crosses the y-axis**
- C. The slope of the line**
- D. The y-coordinate of the origin**

The x-intercept is the point where the line meets the x-axis, which is where the y-coordinate is zero. On the graph, that point has coordinates  $(x_0, 0)$ , representing the x-value where the line crosses the axis. If the line crosses at  $x = 5$ , the x-intercept is 5. If the line never crosses the x-axis (a horizontal line above or below it), there is no x-intercept. If the line lies on the x-axis itself, every point on the line is an x-intercept. This is different from where the line crosses the y-axis (that would be the y-intercept), from the slope (which measures steepness), and from the origin (the specific point  $(0,0)$ ).

**10. Which expression correctly represents slope?**

- A. Rise over Run**
- B. Run over Rise**
- C. Delta X over Delta Y**
- D. X over Y**

The slope is the vertical change divided by the horizontal change as you move along a line. This is rise over run, since rise corresponds to  $\Delta y$  (vertical change) and run corresponds to  $\Delta x$  (horizontal change). So the slope is  $\Delta y/\Delta x$ , which is rightly described as rise over run. If you imagine moving along the line and you go up 3 units for every 2 units to the right, the slope is  $3/2$ , illustrating rise over run. The other phrasing would either swap the numerator and denominator (giving run over rise or  $\Delta x/\Delta y$ ), or just name the coordinates without expressing the change, so they don't capture how steep the line changes.

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## Next Steps

**Congratulations on reaching the final section of this guide. You've taken a meaningful step toward passing your certification exam and advancing your career.**

**As you continue preparing, remember that consistent practice, review, and self-reflection are key to success. Make time to revisit difficult topics, simulate exam conditions, and track your progress along the way.**

**If you need help, have suggestions, or want to share feedback, we'd love to hear from you. Reach out to our team at [hello@examzify.com](mailto:hello@examzify.com).**

**Or visit your dedicated course page for more study tools and resources:**

**<https://tsia2math.examzify.com>**

**We wish you the very best on your exam journey. You've got this!**

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