

SHEET METAL JOURNEYMAN PRACTICE TEST (SAMPLE)

STUDY GUIDE



SAMPLE STUDY GUIDE WITH LIMITED QUESTIONS

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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. Why is material grain direction often considered in metal forming?**
 - A. Because grain direction can affect formability, tearing risk, and surface finish.
 - B. It determines the color of the finish.
 - C. It has no effect on forming.
 - D. It only affects magnetic properties.
- 2. Why would you use a tighter radius on thin sheet metal bends?**
 - A. To increase the bend angle without changing the radius
 - B. To decrease the sheet thickness
 - C. For appearance and fit, but it increases risk of cracking; verify with material capability
 - D. To reduce material cost
- 3. Given a machinery room ventilation system that terminates on the roof and an outside grille serving an air conditioning system in the penthouse, what is the minimum clearance between the discharge outlet and the intake for the air conditioning system?**
 - A. 10 ft
 - B. 15 ft
 - C. 25 ft
 - D. 20 ft
- 4. Gypsum ducts are for return air only and limited to what maximum temperature in °F?**
 - A. 150
 - B. 125
 - C. 100
 - D. 175
- 5. A furnace rated at 7,500 BTUH requires how many square inches of free air?**
 - A. 15
 - B. 6
 - C. 12
 - D. 18

- 6. What is the area formula for a rectangle?**
- A. Area = length × width.
 - B. Circumference = 2 × (length + width).
 - C. Area = diameter × height.
 - D. Area = base × height × width.
- 7. Maximum flame spread distance for combustible electrical wires and cables and optical fiber cables exposed within a plenum is how many feet?**
- A. 5
 - B. 10
 - C. 15
 - D. 20
- 8. Given you are running a gas line and need to bore a hole in a joist. What is the clearance from the top to the bottom of the joist?**
- A. 2 inches
 - B. 3 inches
 - C. 4 inches
 - D. 5 inches
- 9. For a strap hanger installation at 2.2 m spacing for a 1000 x 1000 mm duct, the hanger size should be which of the following?**
- A. 15.0 x 1.00
 - B. 25.4 x 1.31
 - C. 18.0 x 1.25
 - D. 30.0 x 1.50
- 10. What can deviations from project drawings cause in ductwork?**
- A. Improved pattern consistency.
 - B. Misfits and leaks.
 - C. Faster assembly.
 - D. Stronger joints.

Answers

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

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Explanations

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1. Why is material grain direction often considered in metal forming?

- A. Because grain direction can affect formability, tearing risk, and surface finish.**
- B. It determines the color of the finish.
- C. It has no effect on forming.
- D. It only affects magnetic properties.

Grain direction matters in metal forming because the crystals inside a sheet are not identical in every direction after processes like rolling. This creates directional differences in how easily the metal can plastically deform, known as anisotropy. In forming, the material's formability changes with direction, often summarized by the r-value which reflects how the sheet resists thinning in a given direction. That directional variation can make tearing more likely in some orientations and less in others. The way the material flows during forming also affects the surface finish: as grains elongate and align with the flow, the surface can take on a directional texture or reveal grain boundaries, altering the finish. The other statements miss the practical impact of grain orientation. Color of the finish isn't dictated by grain direction. Saying it has no effect contradicts how anisotropy influences deformation behavior. Magnetic properties can be affected by texture in ferromagnetic metals, but that's not the primary concern in forming processes.

2. Why would you use a tighter radius on thin sheet metal bends?

- A. To increase the bend angle without changing the radius
- B. To decrease the sheet thickness
- C. For appearance and fit, but it increases risk of cracking; verify with material capability**
- D. To reduce material cost

When bending thin sheet metal, tightening the bend radius is chosen to improve how the part looks and how it fits with nearby features in a tight space. A smaller radius makes the corner more compact, which can help the edge align with an adjacent surface or allow the part to sit flush in a confined area. The trade-off is that bending with a tight radius concentrates strain in the bend, increasing the risk of cracking, thinning, or wrinkling at the bend, especially in very thin or less ductile materials. Because of that, you must check the material's capability and the minimum bend radius for that thickness, and often perform a bend test or consult data from the material supplier before committing to a tight radius. In short, the tighter radius serves appearance and fit in tight spaces, but it also raises the risk of cracks and damage, so verify the material can tolerate it.

3. Given a machinery room ventilation system that terminates on the roof and an outside grille serving an air conditioning system in the penthouse, what is the minimum clearance between the discharge outlet and the intake for the air conditioning system?

- A. 10 ft
- B. 15 ft
- C. 25 ft
- D. 20 ft**

The key idea is preventing exhaust from the rooftop machinery-room discharge from being drawn back into the penthouse air intake. When the exhaust vent and an outside air intake sit near each other, especially on a roof with wind shifting plumes, the discharged air can be recirculated into the AC system, degrading air quality and reducing efficiency. A twenty foot minimum spacing provides enough buffer for the exhaust plume to dissipate away from the intake, making backflow unlikely under typical conditions. Distances smaller than twenty feet don't reliably prevent recirculation, while twenty-five feet would exceed the required minimum. So, twenty feet is the correct minimum clearance.

4. Gypsum ducts are for return air only and limited to what maximum temperature in °F?

- A. 150
- B. 125**
- C. 100
- D. 175

Gypsum ducts are interior ductwork made from gypsum board and are used primarily for return air, not for hot supply air. They are limited to a maximum operating temperature of 125°F because the gypsum core, paper facing, and the joining materials aren't rated for higher temperatures. Exceeding 125°F can weaken the duct, cause sagging or delamination, and reduce fire-rated performance. So 125°F is the correct maximum. Values above that (150°F, 175°F) would exceed the material's rating, while 100°F is below the limit but not the maximum allowed.

5. A furnace rated at 7,500 BTUH requires how many square inches of free air?

- A. 15**
- B. 6
- C. 12
- D. 18

Providing enough combustion air is essential for safe and efficient operation of a gas furnace. The amount of free air is determined from the appliance's input rating, using a standard rule: about 1 square inch of free opening per 500 BTU per hour. This rule helps ensure there's enough oxygen for complete combustion and proper venting of the flue gases. For a furnace rated at 7,500 BTUH, you divide 7,500 by 500, giving 15 square inches of free air required. If you only had six square inches, that opening would support only about 3,000 BTUH; twelve square inches would handle about 6,000 BTUH; eighteen square inches would handle about 9,000 BTUH. Since 7,500 falls in between, fifteen square inches is the appropriate free-air requirement under this rule.

6. What is the area formula for a rectangle?

- A. Area = length × width.**
- B. Circumference = $2 \times (\text{length} + \text{width})$.
- C. Area = diameter × height.
- D. Area = base × height × width.

Area is the amount of surface a rectangle covers, and for a rectangle you find it by multiplying the two side lengths: length times width. This works because if you imagine filling the rectangle with unit squares, each row has as many squares as the length and there are as many rows as the width, giving a total of length × width square units of area. The other formulas don't fit a rectangle: circumference is a circle measurement, diameter × height mixes circle dimensions with a vertical measure, and base × height × width would give a volume for a 3D box, not a 2D area. For example, a rectangle 8 units long and 3 units wide has an area of 24 square units.

7. Maximum flame spread distance for combustible electrical wires and cables and optical fiber cables exposed within a plenum is how many feet?

A. 5

B. 10

C. 15

D. 20

In a plenum, flame propagation along exposed combustible cables is tightly limited to reduce how far a fire can spread through the air-handling space. The tested rule sets a maximum of five feet for the flame spread along exposed combustible electrical wires, cables, and optical fiber cables. This short distance helps prevent a small ignition from turning into a larger, more dangerous fire and keeps smoke production manageable in a duct or air distribution path. If more than five feet of exposure could occur, the typical approach is to route or protect the cable so the flame path is interrupted or use plenum-rated cable designed for such spaces. The other, longer distances would allow fire and smoke to travel much farther before containment, which is not acceptable in a plenum setting.

8. Given you are running a gas line and need to bore a hole in a joist. What is the clearance from the top to the bottom of the joist?

A. 2 inches

B. 3 inches

C. 4 inches

D. 5 inches

The main idea is to keep enough wood around a hole drilled through a joist so the member isn't weakened and the line is protected. For boring a hole to run a gas line, you want at least two inches of solid wood between the edge of the bore and the top face of the joist, and the same clearance to the bottom face. In other words, there should be a minimum two-inch buffer above the bore and a minimum two-inch buffer below it. This preserves the joist's strength and helps prevent nails or fasteners from hitting or damaging the line. (If the hole is too large relative to the joist depth, or you can't maintain that two-inch clearance, you'd need to reroute the line or use an approved protective method.) The two-inch clearance is the minimum required, so it's the best answer.

9. For a strap hanger installation at 2.2 m spacing for a 1000 x 1000 mm duct, the hanger size should be which of the following?

A. 15.0 x 1.00

B. 25.4 x 1.31

C. 18.0 x 1.25

D. 30.0 x 1.50

The main idea is choosing a strap hanger size that can safely carry the duct weight over the given span and spread the load adequately across the duct's surface. For a 1000 x 1000 mm duct spaced at 2.2 m, you need a strap that provides enough contact area and stiffness to prevent sag or edge gouging while not being more than you actually need. A strap about 25.4 mm wide offers solid load distribution across the duct edge, and a thickness of about 1.31 mm gives enough rigidity to resist bending and long-term creep without adding unnecessary weight or bulk. This combination hits a practical balance: it's wide enough to handle the load reliably at that span and thick enough to maintain performance, without the excess heft or cost of the largest option. The smaller widths would distribute less load and could deform under the same span, while the largest size, though stronger, isn't required for this duct size and span and would be more than necessary.

10. What can deviations from project drawings cause in ductwork?

- A. Improved pattern consistency.
- B. Misfits and leaks.**
- C. Faster assembly.
- D. Stronger joints.

Deviations from project drawings disrupt the precise fit that ductwork relies on. Duct pieces are designed to join at specific dimensions, hole locations, and seam types; when those measurements drift, flanges don't line up, holes misalign, and patterns no longer match. That creates gaps at seams and joints, providing leakage paths for conditioned air. The result is reduced airflow efficiency, higher pressure losses, potential whistling or noise, and the need for rework or extra sealing. So, the effect is misfits and leaks. Deviations wouldn't improve pattern consistency, speed assembly, or strengthen joints; they typically cause misalignment and leakage, not better performance.

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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.

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

<https://sheetmetaljourneyman.examzify.com>

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

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