

# Practice Aptitude

# QUIZ



## Building & Construction

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## Practice Aptitude Quiz

# QUIZ

It is crucial for young people to build their career management skills so they can make informed choices regarding their study and training options and navigate a pathway towards their occupation and career of choice.

This career development resource combines labour market information with a practical industry specific activity to help develop awareness about the skills needed to pursue a career pathway in Building and Construction.

### PART 1: About Building and Construction

#### 1. Building and Construction in a nutshell

##### Key sectors:

- > Carpentry
- > Joinery
- > Shop Fitting
- > Painting and Decorating
- > Bricklaying & Blocklaying
- > Plastering
- > Plumbing \*
- > Tiling
- > Stonemasonry

\*Plumbing is covered by a separate Practice Aptitude Quiz. Go to [www.aapathways.com.au/career\\_03.cfm](http://www.aapathways.com.au/career_03.cfm) to download.

Building and Construction is a major segment of the Australian economy and the third largest employing industry in Australia with over one million workers. Half of this workforce is employed in the housing sector.

Trade outcomes include shopfitting, joinery, stair building, stonemasonry (monumental/installation), signage, brick and blocklaying, carpentry, concreting, demolition, dogging, painting and decorating, segmental paving, rigging, roof tiling, scaffolding, solid plastering, steelfixing, wall and ceiling lining, wall and floor tiling and waterproofing.

Plumbing and services occupations include coverage of urban irrigation, drainage, metal roofing and cladding, plumbing, mechanical services, roof plumbing, gas fitting, fire protection services and hydraulic services design.

#### 2. Key occupation information (Sources: Job Outlook - [www.joboutlook.gov.au](http://www.joboutlook.gov.au); and Australian Jobs 2011 [www.deewr.gov.au/Employment/ResearchStatistics/Documents/AustralianJobs.pdf](http://www.deewr.gov.au/Employment/ResearchStatistics/Documents/AustralianJobs.pdf))

##### Weekly average earnings for major occupations:

- > Carpenter - \$950
- > Bricklayer - \$850
- > Painter and Decorator - \$850
- > Solid Plasterer - \$1,070
- > Fibrous Plasterer - \$1,070
- > Floor and Wall Tiler - \$1,100
- > Shop Fitter - \$950
- > Joiner - \$950
- > Carpenter and Joiner - \$950
- > Stonemason - \$850

## Jobs and demand information

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**Carpenters** construct, erect, install, finish and repair wooden and metal structures and fixtures on residential and commercial buildings. They may also work on large concrete, steel and timber structures such as bridges, dams, power stations and civil engineering projects. They work on building sites, construction and civil engineering projects, and maintenance in large factories and hospitals.

- > Job prospects - Above average
- > Weekly earnings - \$950
- > Occupation size - 122,100

Potential entry level qualifications:

- > Certificate II in Construction
- > Certificate III in Carpentry
- > Certificate III in Shopfitting
- > Certificate III in Joinery
- > Certificate III in Carpentry and Joinery

**Joiners** cut, shape and fit timber parts in workshops to form structures and fixtures, ready for installation. They work mainly on the internal fittings of a building such as window frames, sashes, doors and staircases making patterns, balustrades and mouldings.

- > Job prospects - Above average
- > Weekly earnings - \$950
- > Occupation size - 120,000

Potential entry level qualifications:

- > Certificate II in Construction
- > Certificate III in Joinery
- > Certificate III in Carpentry and Joinery

**Shopfitters** design, make, assemble and install shop fronts, commercial entries, bulkheads and component fittings, install subfloor framing, including bearers, joists and ladder frames.

- > Job prospects - Above average
- > Weekly earnings - \$950
- > Occupation size - 120,000

Potential entry level qualifications:

- > Certificate II in Construction
- > Certificate III in Shopfitting

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**Bricklayers** lay bricks, pre-cut stone, concrete blocks and other types of building blocks in mortar to construct and repair walls, foundations, partitions, arches and other structures.

- > Job prospects - Above average
- > Weekly earnings - \$850
- > Occupation size - 36,700

Potential entry level qualifications:

- > Certificate II in Construction
- > Certificate III in Bricklaying/Blocklaying

**Stonemasons** cut and shape hard and soft stone blocks and masonry slabs for the construction and renovation of stone structures and monumental masonry (stonework for cemeteries). In some States, stonemasonry is divided into various occupations, the major ones being stonemason machinist (stone sawyer and polisher) and lettercutter and stone fixer.

- > Job prospects - Above average
- > Weekly earnings - \$850
- > Occupation size - 36,700

Potential entry level qualifications:

- > Certificate II in Construction
- > Certificate II in Stoneworking
- > Certificate III in Stonemasonry (Monumental/Installation)

**Painters and decorators** apply paint, varnish, wallpaper and other finishes to protect, maintain and decorate interior and exterior surfaces of domestic, commercial and industrial buildings and other structures.

- > Job prospects - Above average
- > Weekly earnings - \$1150
- > Occupation size - 43,700

Potential entry level qualifications:

- > Certificate II in Construction
- > Certificate III in Painting and Decorating

**Solid Plasterers** apply decorative and protective coverings of plaster, cement or similar materials to the interiors and exteriors of buildings.

- > Job prospects - Above average
- > Weekly earnings - \$1150
- > Occupation size - 38,200

Potential entry level qualifications:

- > Certificate II in Construction
- > Certificate III in Solid Plastering

**Fibrous Plasterers** make, apply and fix the internal linings of commercial and residential buildings.

- > Job prospects - Above average
- > Weekly earnings - \$1150
- > Occupation size - 38,200

Potential entry level qualifications:

- > Certificate II in Construction
- > Certificate III in Fibrous Plastering

**Wall and Floor Tilers** lay ceramic, clay, slate, marble, glass and other types of tiles on external and internal walls and floors to provide protective and decorative finishes. Much of the work is undertaken on new buildings, including houses, shops, offices, factories and swimming pools, but wall and floor tilers also renovate existing buildings.

- > Job prospects - Above average
- > Weekly earnings - \$1100
- > Occupation size - 21,000

Potential entry level qualifications:

- > Certificate II in Construction
- > Certificate III in Wall and Floor Tiling

## About the qualifications

Qualifications provide the core skills, knowledge and experience (competencies) required for effective performance on the job plus the option of choosing a range of elective competencies that meet the needs of the employer and the individual.

Every qualification includes an emphasis on “Employability Skills” or the skills that employers identify as playing a significant part in contributing to an individual’s effective and successful participation in the workplace.

Employability skills are non-technical skills. They are also sometimes referred to as generic skills, capabilities, enabling skills or key competencies.

The Employability Skills are:

- > **Communication skills** that contribute to productive listening and understanding, speaking clearly and directly and harmonious relations across employees and customers;
- > **Teamwork skills** that contribute to productive working relationships and outcomes;
- > **Problem-solving skills** that contribute to productive outcomes;
- > **Initiative and enterprise skills** that contribute to innovative outcomes;
- > **Planning and organising skills** that contribute to long and short-term strategic planning;
- > **Self-management skills** that contribute to employee satisfaction and growth;
- > **Learning skills** that contribute to ongoing improvement and expansion in employee and company operations and outcomes;
- > **Technology skills** that contribute to the effective carrying out of tasks.

### 3. Career Pathways Websites

- > Apprenticeships Pathways - view potential career pathways for this industry - Go to [www.aapathways.com.au/search\\_job\\_02.cfm?c=31](http://www.aapathways.com.au/search_job_02.cfm?c=31)

Other useful careers sites are:

- > Construct My Career - [www.constructmycareer.com.au](http://www.constructmycareer.com.au)
- > My Future - [www.myfuture.edu.au](http://www.myfuture.edu.au)
- > Job Guide - [www.jobguide.thegoodguides.com.au](http://www.jobguide.thegoodguides.com.au)
- > Career Factsheets - [www.ncdw.com.au/index.php/Career-Factsheets.html](http://www.ncdw.com.au/index.php/Career-Factsheets.html)

## 4. Job Hunting

### Job vacancy website:

- > **Australian Jobsearch** - [www.jobsearch.gov.au/findajob/advancedsearch.aspx](http://www.jobsearch.gov.au/findajob/advancedsearch.aspx) The Australian Government's job site. Input your postcode, select the Occupation Category "Building and Construction", scroll down to the "Additional Search Criteria" section and click on "Apprenticeships/ Traineeships", then click on the "Find Jobs" button.

### Job hunting hints and labour market information:

- > **Australian Apprenticeships Pathways** - [www.aapathways.com.au](http://www.aapathways.com.au) Click on "Search" to find potential Australian Apprenticeships occupation ideas. You can also find Job Hunting hints in the "Self Help" menu item.
- > **My Future: Labour Market Information** - [www.myfuture.edu.au/services/default.asp?FunctionID=5400](http://www.myfuture.edu.au/services/default.asp?FunctionID=5400) Click on the map or use the drop down menu to find general labour market information for your region including top occupations and incomes. Data is based on the most recently available census.

## 5. Useful Contacts

Here are some links to a range of support services, organisations and government agencies that may help with careers research and job hunting:

### Support Services:

- > Search for your local Australian Apprenticeships Centre - [www.aapathways.com.au/search\\_aac.cfm](http://www.aapathways.com.au/search_aac.cfm)
- > Group Training Organisations employ Australian Apprentices and places them with businesses - [www.grouptraining.com.au](http://www.grouptraining.com.au)
- > Job Services Australia providers work with eligible job seekers to develop an individually tailored Employment Pathway Plan. The plan maps out the training, work experience and additional assistance needed to find job seekers sustainable employment - [www.jobsearch.gov.au/provider/pages/whichprovider.aspx](http://www.jobsearch.gov.au/provider/pages/whichprovider.aspx)

### Industry Organisations:

- > Construction and Property Service Industry Skills Council - [www.cpsisc.com.au](http://www.cpsisc.com.au)
- > Master Builders Australia - [www.masterbuilders.com.au/Careers](http://www.masterbuilders.com.au/Careers)
- > Housing Industry Association - [www.hia.com.au/Careers.aspx](http://www.hia.com.au/Careers.aspx)
- > Master Painters Australia - [www.masterpainters.org.au](http://www.masterpainters.org.au)
- > Association of Wall and Ceiling Industries Australia and New Zealand - [www.awci.org.au/cgi-bin/index.cgi](http://www.awci.org.au/cgi-bin/index.cgi)
- > Tilers Associations in Australia - [www.tilers.com.au/features/australian-tiling-associations](http://www.tilers.com.au/features/australian-tiling-associations)
- > Australian Shop and Office Fitting Industry Association - [www.asofia.com.au](http://www.asofia.com.au)
- > Australian Manufacturing Workers Union - [www.amwu.org.au](http://www.amwu.org.au)
- > CFMEU - [www.cfmeu.asn.au](http://www.cfmeu.asn.au)
- > Australian Chamber of Commerce and Industry - [www.acci.asn.au](http://www.acci.asn.au)
- > AI Group - [www.aigroup.com.au/growyourbusiness](http://www.aigroup.com.au/growyourbusiness)
- > Be Constructive Construction Skills Queensland - [www.beconstructive.com.au](http://www.beconstructive.com.au)

## 5. Useful Contacts - continued

### Government Agencies:

- > Government websites about the Building and Construction Industry - [www.australia.gov.au/topics/  
business-and-industry/industry/building-and-construction-industry](http://www.australia.gov.au/topics/business-and-industry/industry/building-and-construction-industry)

## Part 2: About this Resource

# QUIZ

### Guidance

This Practice Aptitude Quiz demonstrates some of the key learning standards required of people attempting an Australian Apprenticeships entry level qualification in Building and Construction.

**This Practice Aptitude Quiz is neither a formal tool nor a direct pre-requisite for any job application.**

This Quiz has been developed with the assistance of Industry and Registered Training Organisations, based on the needs and requirements of the Industry sector.

This Practice Aptitude Quiz has three components: Literacy, Reading and Comprehension; General Knowledge and; Mathematics. The mathematics skills required to complete the questions contained within this document are equivalent to mathematics at the Year 10 level.

The Quiz can be used by different organisations and people such as careers practitioners, Group Training Organisations and Job Services Australia providers with job seekers.

The Practice Aptitude Quiz can be:

- > used by careers practitioners with individuals or in a class setting to provide general guidance on the level of skill and knowledge involved in undertaking an entry level qualification in this industry;
- > provided to people to enable them to practice their skills before sitting an actual aptitude test;
- > used by teachers as a guide to industry math requirements at the entry point of this particular Australian Apprenticeship career path.

The Quiz should be able to be completed in approximately 1 hour and 20 minutes.

**Please note that rates quoted in this for various items, including pay rates, are not meant to reflect today's values, they are used purely for mathematical purposes.**

Calculators may be used but should not be necessary for the majority of the quiz.

Answers are located at the end of the quiz.

### After the Quiz

There are a range of support services available to help you find out about courses that may help you improve your literacy and numeracy skills and also your readiness for work.

If you are still at school you should discuss any concerns you may have with your career adviser. Further information may also be provided by a Job Services Australia provider, an Australian Apprenticeships Centre, a Group Training Organisation or a training provider.

## Useful Contacts

Here are some links to job seeker support services:

- > Search for your local Australian Apprenticeships Centre - [www.aapathways.com.au/search\\_aac.cfm](http://www.aapathways.com.au/search_aac.cfm)
- > Find a local Group Training Organisation - [www.grouptraining.com.au/Find/find\\_gto.html](http://www.grouptraining.com.au/Find/find_gto.html)
- > Job Services Australia providers work with eligible job seekers to develop an individually tailored Employment Pathway Plan. The plan maps out the training, work experience and additional assistance needed to find job seekers sustainable employment - [www.jobsearch.gov.au/provider/ProviderLocation.aspx?ProviderType=JNS&](http://www.jobsearch.gov.au/provider/ProviderLocation.aspx?ProviderType=JNS&)

## Part 3: The Quiz

# QUIZ

### Section 1 - Literacy, Reading and Comprehension

#### Spelling

1. The following text has 12 spelling errors in it. Correct those errors and list them in the order you find them in the text.

Today the “Building and Construction Industry” is worth over \$50 bilion and employs over three quarters of a million people. The industry is divided into three sectors: domestic; comercial; and civil. The magority of workers are ether aprentices/trainees, construction workers or tradspersons. There are over 20 trades ranging from concrite and steal workers to telecommunication technicians. There are many carreer pathways and oportunities available to prospective employes willing to apply themselves.

- |          |           |
|----------|-----------|
| 1. _____ | 7. _____  |
| 2. _____ | 8. _____  |
| 3. _____ | 9. _____  |
| 4. _____ | 10. _____ |
| 5. _____ | 11. _____ |
| 6. _____ | 12. _____ |

2. Write the correct spelling for the following words

- |                  |       |
|------------------|-------|
| a. Elemination   | _____ |
| b. Prefabrikated | _____ |
| c. Demolishon    | _____ |
| d. Certifikate   | _____ |
| e. Sprinklar     | _____ |
| f. Briklaying    | _____ |
| g. Vocationl     | _____ |
| h. Permision     | _____ |
| i. Comitees      | _____ |
| j. Partisipate   | _____ |

## Comprehension

# QUIZ

Read the following passage and answer the questions that follow.

The purpose of the construction industry is to erect structures, from simple house structures to major multi-storey civil and commercial structures. A construction project begins with an idea and ends with the completion of the final structure. From beginning to end there are several stages and each stage has its own series of steps. In order for each stage of the project to be completed successfully effective communication is vital.

Communication can only be considered successful when the receiver of the information understands exactly what the sender of the information intended. Feedback from the receiver of the information to the sender of the information can determine if the communication was successful. Workplace communication is how we convey or share information in the workplace. People use a wide variety of ways to communicate with each other. Sometimes these are used alone or combined together to make a message or information clearer. Methods of communication include verbal, written, electronic and non-verbal. When communicating you must be accurate, clear, concise, comprehensive and logical.

3. **What is the main purpose of the construction industry?**

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4. **What is the most important tool or skill that is used in the building and construction industry to ensure a project is completed successfully?**

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5. **Explain how you would know if someone had understood an instruction you gave them.**

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# QUIZ

6. List three different examples used to exchange information.

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7. Do you think effective communication is important in the building and construction industry? Why?

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## General Knowledge

8. What tool is that?

Match the tool names to the pictures of the tools.



A)



B)



C)



D)



E)



F)

Name of Tool	Write in the letter associated with the correct picture
Mallet	
Claw hammer	
Phillips Head Screwdriver	
Ball-Peen Hammer	
Masonry or Brick Hammer	
Slotted Screwdriver	

# QUIZ

9. Read the following about Personal Protective Equipment (PPE) and then answer the questions that follow.

Personal protective clothing, overalls, hand protection and foot protection are often necessary and respiratory protective equipment may be required when dangerous gases and dusts are present. Personal protective equipment (PPE) includes clothing, equipment and substances designed to be worn by a person to protect them from risks of injury or disease.

PPE is only to be used in the workplace where it is not reasonably practicable to control hazards by other means.

The following information describes some PPE used to guard workers against specific hazards.

Gloves



Photo A

Breathing Mask



Photo B

Goggles



Photo C



Sign A



Sign B



Sign C



Sign D

Part of Body	Some Potential Hazards
Head	Falling objects
Face & Eyes	Sparks, ultraviolet light, metal shards, chemical splashes, fumes. Wood splinters
Hearing:	Excessive noise
Respiratory:	Dust, fumes, vapours, wood shavings, sawdust
Hands:	Abrasion, sparks, irritant substances, vibration , electric shock, wood splinters
Feet:	Crushing, slipping, abrasion, irritant substances, wetness, electric shock, static electricity, puncture, cold/heat.

**Questions:**

- a. Using a hammer drill can produce sparks that have the potential to damage eyes. What PPE could be used to guard against this hazard? Write the photo and/or sign title below. (Note: there may be more than one PPE that can be used in this case).

# QUIZ

- b. If you are lifting heavy objects there is a risk of dropping the load on your feet. What PPE offers protection if this were to happen? Write the photo and/or sign title below.
- 

- c. Some machinery operates at high noise levels. What PPE helps protect worker's hearing in these types of situations? Write the photo and/or sign title below.
- 

## Section 2 – Mathematics

### Numbers (Measurement, Scales, Decimals, Rounding, Estimates, Scientific Notation)

1. Match the abbreviations to the correct unit of measurement which they represent. Write your answers in the table below.

kg	ml	km/hr	$m^2$
\$	m	min	$^{\circ}C$

length	
time	
temperature	
weight	
area	
speed	
volume	
cost	

2. Match the numbers to their descriptions. Write your answers in the table below.

3/8	$35^{\circ}$	25%
5:4	16.37	$2\frac{1}{3}$

percentage	
decimal number	
fraction	
mixed number	
ratio	
angle	

# QUIZ

3. Write as a number:

- a. Two thousand six hundred and thirty four \_\_\_\_\_  
b. Fifty six thousand and eighty seven. \_\_\_\_\_

4. Round:

- a. 35.6754 to two decimal places \_\_\_\_\_  
b. 425.8 to the nearest ten \_\_\_\_\_  
c. 248 to the nearest hundred \_\_\_\_\_

5. Estimations

Write your estimations for the following.

height of a standard door (use m or mm)	
length and width of A4 sized paper (use cm)	
angle between the floor and wall (use degrees)	
floor area of a single car garage (use $m^2$ )	

6. Write the following decimals in descending order.

7.19      71.9      0.719

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7. Solve the following equations:

- a.  $2 + 3 \times 4$  = \_\_\_\_\_  
b.  $4 - 10 \div 2$  = \_\_\_\_\_  
c.  $50 + 50$  = \_\_\_\_\_  
d.  $2 \times 25$  = \_\_\_\_\_  
e.  $(16 - 5) \times 3$  = \_\_\_\_\_  
f.  $(75 \div 5) \div (12 \div 4)$  = \_\_\_\_\_  
g.  $8^2$  = \_\_\_\_\_  
h.  $\sqrt{25}$  = \_\_\_\_\_

## Operations (Addition, Subtraction, Division, Multiplication)

# QUIZ

8. Subtract:

a. 1,784 from 5,218 \_\_\_\_\_

b. 29.461 from 43.18 \_\_\_\_\_

9. Find the total of:

a. \$2.00, \$21.45 and \$8.23 \_\_\_\_\_

b. 18.32, 471.019 and 315 \_\_\_\_\_

c. 2.63m and 50cm \_\_\_\_\_

10. Multiply:

a. 6.87 by 10 \_\_\_\_\_

b. 13.8 by 3 \_\_\_\_\_

c. 46.2 by 8.5 \_\_\_\_\_

11. Divide:

a. 3.45 by 10 \_\_\_\_\_

b. 3024 by 14 \_\_\_\_\_

c. 56.2 by 0.2 \_\_\_\_\_

12. Select the best estimate for each of the following. (Circle the correct answer)

a.  $4,249 \times 71$

280,000      150,000      28,000

b.  $80,000 \div 38$

200      2,000      20,000      4,000

## Fractions

13. Add the following:

a.  $\frac{1}{4}$  and  $\frac{1}{2}$  \_\_\_\_\_

b.  $\frac{2}{9}$  and  $\frac{5}{6}$  \_\_\_\_\_

c.  $3\frac{1}{4}$  and  $\frac{1}{8}$  \_\_\_\_\_

# QUIZ

14. Subtract the following:

a.  $5/6 - 1/4$  \_\_\_\_\_

b.  $21/14 - 4/7$  \_\_\_\_\_

15. Which fraction is mid-way between  $\frac{1}{4}$  and  $\frac{3}{4}$ ?

\_\_\_\_\_

## Percentages

16. Evaluate the following:

a. 10% of \$44 \_\_\_\_\_

b. 25% of 12.84 \_\_\_\_\_

17. Michelle earns \$800 a week. She gets a pay rise of 5%. What is her new wage?

\_\_\_\_\_

18. Mal purchased a belt sander for \$250 which he later sold for \$375.

a. How much profit did he make? \_\_\_\_\_

b. What was the profit as a percentage of the cost price? \_\_\_\_\_

19. Rebecca is a painter who buys the following items from a paint store:

Paint \$215; rollers and brushes \$95; cleaning fluids \$12; and plastic covers \$8.

Rebecca gets 10% trade discount.

a. How much would Rebecca pay without discount? \_\_\_\_\_

b. How much will she pay with the discount? \_\_\_\_\_

c. How much has Rebecca saved? \_\_\_\_\_

20. Akeem scored 80% in an exam. There were 25 questions.

a. How many questions did he get right? \_\_\_\_\_

b. How many questions did Akeem get wrong? \_\_\_\_\_

# QUIZ

## Decimals

21. Find the decimal number halfway between:

- a. 0.6 and 0.8 \_\_\_\_\_  
b. 2.8 and 2.9 \_\_\_\_\_

22. If a plastic pipe costs \$8.00 a metre, how many complete metres of pipe could be bought for \$60.00?

\_\_\_\_\_

23. Camillo bought Christmas lunch for his four employees. The cost was \$148.60.

- a. If the cost of the lunch had been divided equally among the five people, how much would each have paid?

\_\_\_\_\_

- b. If Camillo had purchased the lunch using a voucher giving a 40% discount, how much would have the lunch cost him?

\_\_\_\_\_

24. Phil is a plasterer and earns \$28.00 an hour for a normal 40 hour week. For any overtime, that is hours worked over the standard 40 hour week, he receives a pay rate of 'time-and-a-half' or one and a half times the normal pay rate.

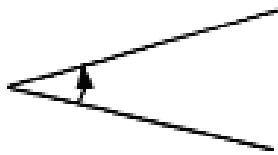
What is Phil's total pay if he works 42 hours this week?

\_\_\_\_\_

## Geometry

25. Estimate the size of the following angles by selecting the appropriate answers from the list below. (Circle the correct answer).

a.



- i.  $30^\circ$   
ii.  $110^\circ$   
iii.  $170^\circ$

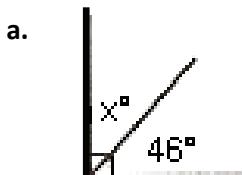
b.



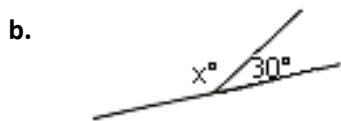
- i.  $30^\circ$   
ii.  $110^\circ$   
iii.  $170^\circ$

# QUIZ

26. Find the value of  $x^\circ$  in the following:



$$x = \underline{\hspace{2cm}}$$

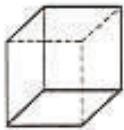


$$x = \underline{\hspace{2cm}}$$

## Shapes

27. Match the description of shapes in the table to the pictures below. Write your answer in the table.

i.	circle	
ii.	triangle	
iii.	rectangle	
iv.	square	
v.	semicircle	
vi.	parallel lines	
vii.	cross	
viii.	star	
ix.	cube	
x.	cylinder	
xi.	diagonal	
xii.	right angle	
xiii.	revolution	
xiv.	right angled triangle	
xv.	straight angle	
xvi.	circle and diameter	
xvii	circle and radius	



A



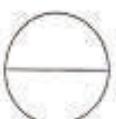
B



C



D



E



F



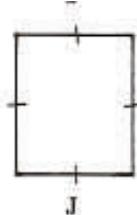
G



H



I



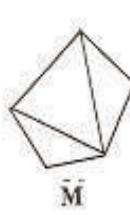
J



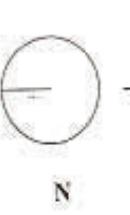
K



L



M



N



O



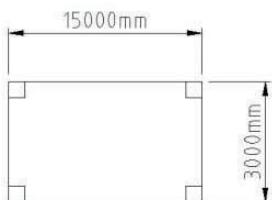
P



Q

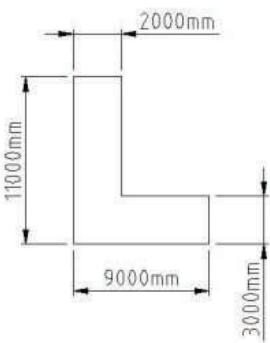
28. Find the perimeter of these shapes.

a.



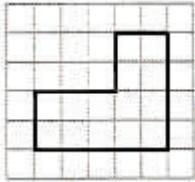
\_\_\_\_\_

b.



\_\_\_\_\_

29. If each square represents 1 square centimeter, what is the area of the shape shown?



\_\_\_\_\_

30. A bricklayer estimates there are 55 bricks to the square metre. How many bricks are needed for a 6 square metre wall?

\_\_\_\_\_

31.

a. A circular flowerbed with a radius of 3 metres is to be surrounded by a concrete path 1 metre wide. Calculate the area of the path, where  $\pi = 3.14$ .

\_\_\_\_\_

b. A quote to supply and lay the concrete for this path is \$10 per square metre. What is the cost of the path?

\_\_\_\_\_

# QUIZ

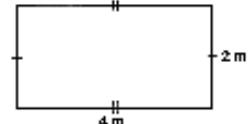
32. An oil can in the shape of a cylinder has a radius of 6 cm and a height of 20 cm. What is the volume of the can? (Use  $\pi = 3.14$ )
- 

33. Dirk is going to paint his ceiling in the lounge room which measures 6 metres by 3 metres. One litre of ceiling paint covers 12 square metres.

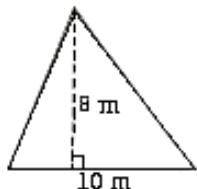
- a. What is the area of the ceiling? \_\_\_\_\_  
b. How many litres of paint will he use? \_\_\_\_\_

34. What is the area of these shapes?

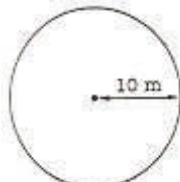
a.



b.

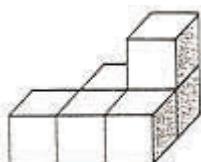


35. Calculate the area of this circle? Use the formula  $A = \pi r^2$   
Where  $\pi = 3.14$ .



---

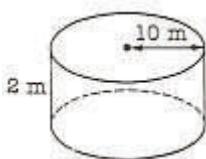
36. If each cube represents 1 cubic centimetre, what is the total volume of the shape shown?



---

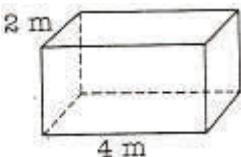
# QUIZ

37. Calculate the volume of the cylinder using the formula  $V = \pi r^2 h$   
Where  $\pi = 3.14$ .



\_\_\_\_\_

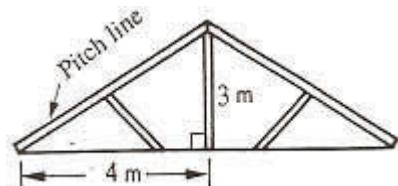
- 38 If the volume of this box is 24 cubic metres, how high are the sides?



\_\_\_\_\_

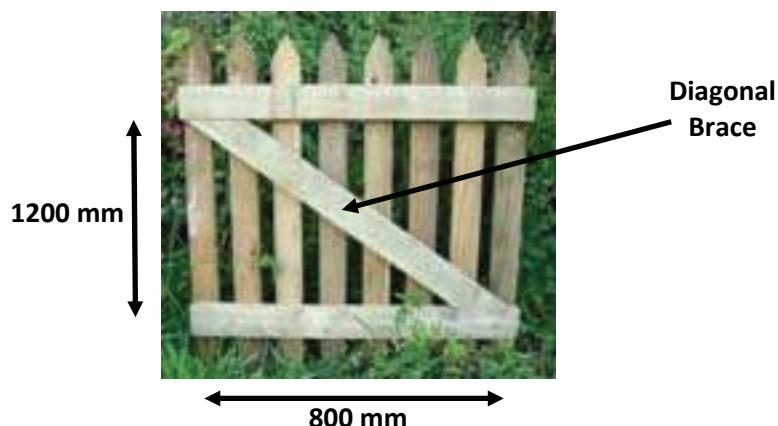
## Pythagoras

39. Calculate the pitch line length of one side of the gable roof?



\_\_\_\_\_

40. A wooden gate 800 mm wide and 1200 mm high needs a diagonal brace for support. How long will the brace be?



Answer: \_\_\_\_\_

# QUIZ

## Ratio

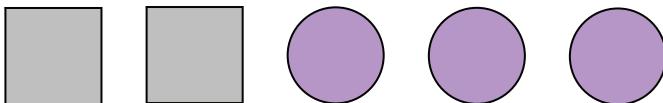
41. A ready-mix concrete company uses metal, sand and cement in the ratio of 7:5:3. What amount of cement is needed for a 15 m<sup>3</sup> job?

---

42. If the scale on a drawing is 1:100, what length will be represented on the drawing by a measurement of 80mm?

---

43. What is the ratio of the number of circles to squares?



---

44. Adam always mixes 8 shovels of sand with 10 shovels of metal when he makes concrete. How many shovels of sand will Adam mix with 50 shovels of metal?

---

## Problem Solving

45. Calculate the cost of 40 hinges at \$3.00 a pair?

---

46. If five litres of glue costs \$65.00, how much will 1 litre cost?

---

47. Carla, a 3rd year apprentice, is paid a yearly salary of \$31,200. Calculate her:

- a. Monthly salary \_\_\_\_\_  
b. Fortnightly salary \_\_\_\_\_

# QUIZ

48. Peter the carpenter is paid \$26.00 per hour plus time and a half for any hours over 35 hours per week. If he worked 42 hours last week, what was his pay:
- The first 35 hours work? \_\_\_\_\_
  - The overtime work only? \_\_\_\_\_
  - Total pay? \_\_\_\_\_
49. Eamon's car uses 10 litres of petrol every 300 kilometres. What is its rate of petrol consumption in km per litre?
- \_\_\_\_\_
50. If a 3,600 litre water tank is  $\frac{1}{4}$  full:
- How much water is in the tank? \_\_\_\_\_
  - How much is empty space? \_\_\_\_\_
51. Simon is a bricklayer. He uses 50 bricks to build a 1 square metre wall. How many bricks are needed to build a wall that measures 6 metres by 3 metres?
- \_\_\_\_\_
52. Gerry is a carpenter making a bookcase. She hit a nail 65 mm long through a piece of wood 22.5 mm thick and into a large piece of wood. How far did the nail go into the large piece of wood?
- \_\_\_\_\_

# ANSWERS

# QUIZ

## Section 1 - Literacy, Reading & Comprehension Questions

1. billion, commercial, majority, either, apprentice, tradesperson, concrete, steel, telecommunication, career, opportunities, employees
2. Elimination, Prefabricated, Demolition, Certificate, Sprinkler, Bricklaying, Vocational, Permission, Committees, Participate
3. The main purpose of the industry is to build structures. These structures could range from family homes to large business structures.
4. Communication is the most important tool or skill to use to ensure a project is completed successfully. There are so many stages between the start and completion of a structure that require people to communicate with each other.
5. You can tell if someone has understood the instruction you gave them from the feedback the receiver gives you. The feedback might be given to you verbally, ie: 'Yes I understand', could be given to you in written form, electronic or non-verbal ie: a nod of a head.
6. Verbal: speaking to each other, Written: sending a request, Electronic: sending an email
7. Yes, it's very important. There are so many stages between the commencement of a structure to the completion. Several tradespeople are involved and are often relying on work to be completed before they can start theirs. If there is a break down in communication, stages can become delayed, structures aren't built properly, the building of the structures might have to start again and generally time and resources are wasted. Break down of communication can become very costly as well!
8. E, A, B, C, F, D.
9. a. Photo C and Sign C      b. Sign B      c. Sign D

## Section 2 - Mathematics

1. m, min, °C, kg, m<sup>2</sup>, km/hr, ml, \$
2. 25%, 16:37,  $\frac{3}{8}$ , 2½, 5:4, 35°
3. a. 2,634      b. 56,087
4. a. 35.68      b. 430      c. 200
5. a. 2m or 2000mm      b. 30cm by 20cm      c. 90°      d. 6m x 3m = 18m<sup>2</sup>
6. 71.9, 7.19, 0.719
7. a. 14      b. -1      c. 100      d. 50      e. 33  
f. 5      g. 64      h. 5
8. a. 3,434      b. 13.719
9. a. \$31.68      b. 804.339      c. 3.13 m
10. a. 68.7      b. 41.4      c. 392.7
11. a. 0.345      b. 216      c. 281
12. a. 280,000      b. 2,000
13. a.  $\frac{3}{4}$       b.  $\frac{19}{18}$  or  $1\frac{1}{18}$       c.  $\frac{27}{8}$  or  $3\frac{3}{8}$
14. a.  $\frac{7}{12}$       b.  $\frac{13}{14}$
15.  $\frac{1}{2}$
16. a. \$4.40      b. 3.21
17. \$840

# QUIZ

18. a. \$125      b. 50%
19. a. \$330      b. \$297      c. \$33
20. a. 20      b. 5
21. a. 0.7      b. 2.85
22. 7
23. a. \$29.72      b. \$89.16
24. \$1204.00
25. a. i.  $30^\circ$       b. ii.  $110^\circ$
26. a.  $44^\circ$       b.  $150^\circ$
27. i. K      ii. G      iii. P      iv. J      v. C      vi. L      vii. B  
ix. A      x. I      xi. M      xii. D      xiii. O      xiv. H      xv. F  
xvii. N      xviii. E
28. a. 36,000mm      b. 40,000mm
29.  $14\text{cm}^2$
30. 330 Bricks
31. a.  $21.98\text{m}^2$       b. \$219.80
32.  $2,260.8\text{cm}^3$
33. a.  $18\text{m}^2$       b. 1.5litres
34. a.  $8\text{m}^2$       b.  $40\text{m}^2$
35.  $314\text{m}^2$
36.  $6\text{cm}^3$
37.  $628\text{m}^3$
38. 3m
39. 5m
40. 1442.22mm
41.  $3\text{m}^3$
42. 8,000mm or 8m
43. 3:2
44. 40
45. \$60
46. \$13.00
47. a. \$2,600      b. \$1,200
48. a. \$910      b. \$273      c. \$1,183
49. 30km/l
50. a. 900 litres      b. 2,700 litres
51. 900 Bricks
52. 42.5mm

# Contributions

# QUIZ

This practice aptitude quiz would not have been possible without the support of the State Government of South Australia, Group Training Australia (SA) Inc and its members.

**This Practice Aptitude Quiz was developed by:**



**Group Training South Australia - [www.gtasa.com.au](http://www.gtasa.com.au)**

Group Training Australia (SA) (GTA SA) is a network of independent not for profit organisations located in metropolitan Adelaide and all major population centres throughout the state. These organisations operate on either an industry or regional basis and collectively they provide employment for in excess of 4,000 apprentices and trainees.

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- > Career Employment Group - [www.ceg.net.au](http://www.ceg.net.au)
- > Group Training Employment - [www.gte.org.au](http://www.gte.org.au)
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- > Murraylands Training & Employment Association of SA Inc - [www.mteasa.com.au](http://www.mteasa.com.au)
- > PEER VEET - [www.peer.com.au](http://www.peer.com.au)
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- > SMGT Total Employment Solutions - [www.smgt.com.au](http://www.smgt.com.au)
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Statewide Group Training is an independent, community-based not for profit organisation that has been operating successfully since 1988. Statewide is one of the largest employers of Apprentices and Trainees in South Australia. Currently employing approximately 400 young people in a wide variety of industries, Statewide Group Training is an Equal Opportunity Employer that covers vocations for both Apprenticeships and Traineeships.

# QUIZ



## Housing Industry Association - [www.hia.com.au](http://www.hia.com.au)

One of the greatest challenges our industry faces is the shortage of trade skills. HIA Apprentices was formed more than 20 years ago to address this issue; to help young people into apprenticeships and make it easier for builders and contractors to take them on. As a result of the ongoing training and mentoring provided by HIA Members and HIA Apprentices staff, thousands of young people have become highly skilled and successful tradespeople in great demand.



## Australian Apprenticeships Pathways Website - [www.aapathways.com.au](http://www.aapathways.com.au)

This website provides sample Australian Apprenticeships job descriptions and links to more Australian Apprenticeships information and resources. The site is funded by the Department of Education, Employment and Workplace Relations.



## Construction and Property Services Industry Skills Council - [www.cpsisc.com.au](http://www.cpsisc.com.au)

Construction and Property Services Industry Skills Council (CPSISC) The CPSISC represents the workforce training and development needs of an extremely large and vitally important sector of the Australian economy - the Construction and Property Services Industries.



## The Career Education Association of Victoria - [www.ceav.vic.edu.au](http://www.ceav.vic.edu.au)

The CEAV is the Victorian peak body for secondary school career practitioners, work experience coordinators, VET coordinators and MIPS coordinators. The CEAV provides professional development opportunities for members and also works with business, industry, and the education and training sector.



## Industry Training Australia P/L - [www.itaust.com.au](http://www.itaust.com.au)

Industry Training Australia (ITA) develops and delivers information and communication services, including the Australian Apprenticeships Pathways website, for service provider networks and the general public.

**For enquiries about this Practice Aptitude Quiz contact the Australian Apprenticeships and Traineeships Information Service on 1800 338 022.**