

Designed for: Year 10

Numerical computation

Descriptor: Possessing an acceptable level of numerical computation is highly important in the resources sector where the use of simple maths such as addition, subtraction, multiplication, and division are common place to perform routine measurements and calculations.

All trade specialties need a high level of numerical computation. Tradespeople work with fractions, percentages and decimals to produce an outcome (e.g. measuring dimensions of a room, pipe/timber/wiring lengths, conversion of watts to kilowatts, calculating loads).

A practical example of this is, an electrician would need to calculate a load and this typically involves converting percentages to decimals or whole numbers. This value would then be multiplied by the value of the load to work out the required circuit breaker size.

Working on lathes and milling machines also requires high-precision calculations.

Tradies also use trigonometry to determine the precise angle needed to bend pipe, plate or conduit around an object and connect it to the right spot.

Numerical computation is essential to working successfully and safely. Mistakes can lead not only to complaints about the work, and wasted time and money, but also accidents causing injury or worse.

Intent: The following resources may be used as a mini-unit on the topic indicated or as a prequel to the e-learning QMEA & Blue Dog Apprentice Aptitude test training program. Practice can improve test scores for all types of aptitude tests, so students are urged to try as many types of aptitude tests as possible. Use of calculators at discretion of teacher.

Instructions for students: Please read through the instructions carefully and answer as instructed. Students should save the file to their desktop and open it using Adobe Acrobat Reader in order to save the content.

Disclaimer: The material contained in these practice resources has been compiled to prepare students who are seeking employment within the mining and energy sectors. It is to be used as a guide only and should not be relied upon as a definitive body of work. Students should seek additional sources of assistance and information. No liability or responsibility is taken for any student's aptitude testing outcome.

Numerical computation

Questions: Select the correct answer.

1. $117 - ? = 45$

76	35	72	74	52
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2. $160 + 155 = ?$

315	299	314	319	305
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3. $910 \times 6 = ?$

4560	4755	5465	5010	5460
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4. $560 / 80 = ?$

10	8	12	7	6
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5. 15% of \$220 = ?

\$35.00	\$22.00	\$15.00	\$30.00	\$33.00
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6. $4 \times 7 \times 2 - ? = 23$

30	42	27	33	40
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7. What number comes next in sequence 14, 20, 26

38	30	32	34	29
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8. $\frac{2}{3} \times \frac{1}{3} =$

$\frac{2}{9}$	$\frac{4}{10}$	$\frac{4}{9}$	$\frac{2}{3}$	$\frac{1}{3}$
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9. $\$4.40 \div _? = \0.55

8	10	7	12	6
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10. $5.3 + 2.5 - 1.6 =$

6	5.6	6.2	9.4	7.2
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11. Express $\frac{3}{20}$ as a percentage

45%	33%	20%	3%	15%
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12. Find the average: 14,26,24,49,3,26,19,43,39 _____

13. Express 40% as a fraction

$\frac{2}{3}$	$\frac{1}{5}$	$\frac{4}{5}$	$\frac{1}{4}$	$\frac{2}{5}$
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14. Convert $\frac{5}{8}$ as a decimal

0.413	0.625	0.8	0.641	0.609
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15. Convert $\frac{11}{32}$ as a decimal

0.328	0.391	0.359	0.375	0.344
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16. Convert $\frac{61}{64}$ as a decimal

0.969	0.953	0.938	0.922	0.984
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17. $2\frac{3}{5} - \frac{4}{5} =$

$1\frac{1}{4}$	$1\frac{1}{2}$	$1\frac{3}{5}$	$1\frac{1}{5}$	$1\frac{4}{5}$
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Numerical computation

Problem solving. Select the correct answers.

1. Angle iron costs \$8.00 a metre. How many complete metres of angle iron could you buy for \$60.00

7	8	12	10	15
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2. A gold ingot weighs 230 grams. What would 6 ingots weigh?

1.38kg	1.42kg	1kg	1.5kg	1.25kg
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3. The input costs of a job include: materials \$145.00, consumables \$23.50, and 2-hours labour charged out at \$80.00 per hour. What would the total cost of the job be?

\$330.50	\$305.50	\$328.50	\$168.50	\$248.50
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4. A grinding wheel rotates at 450 revolutions per minute. How many revolutions would it make in quarter of an hour?

4500	6500	8750	6750	5500
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5. If a welder completes 45% of the welds on the job that has 540 welds, how many welds are still needed?

260	243	265	297	240
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6. A fabricator can press 6 sheets every 3 minutes. How many sheets will be pressed in half an hour?

42	80	30	120	60
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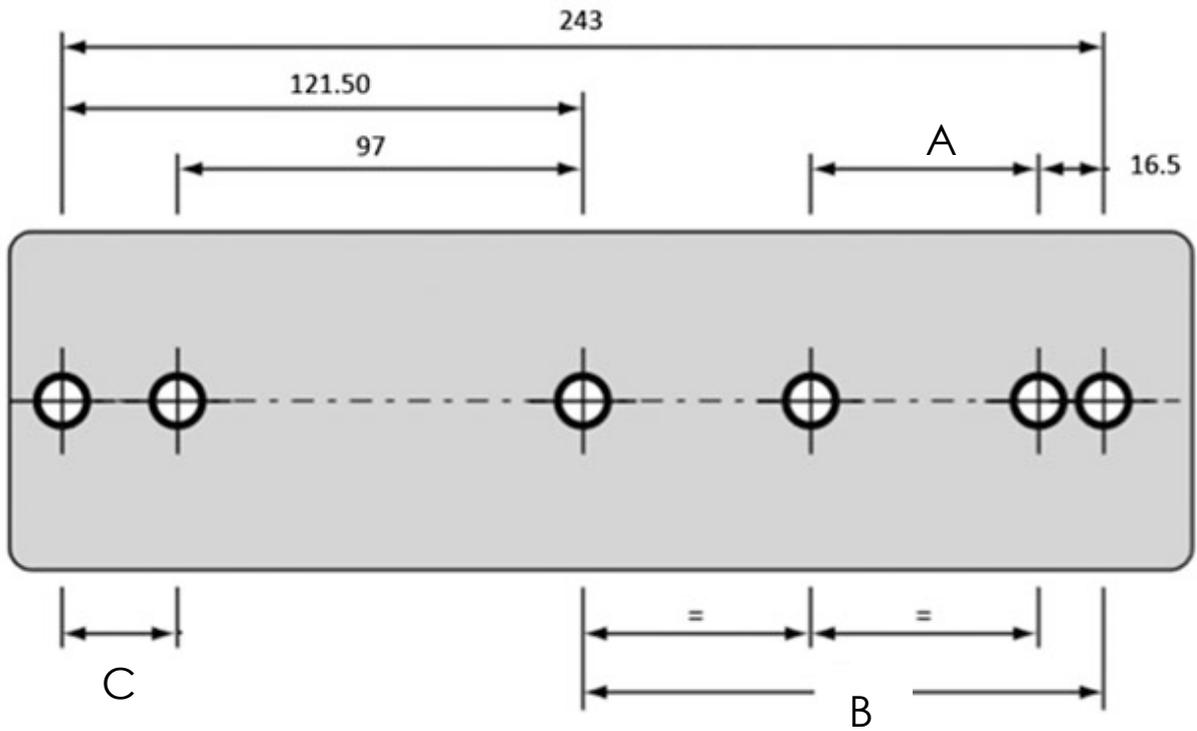
7. Yesterday, a trade store had 6 spanner-set combinations (with 14 ring and open-end metric) on sale for \$104 per set in stock, and 12 hammers on sale for \$24 each in stock.

Today there are only 2 spanner sets left in stock, and 8 hammers left in stock.

In terms of dollars sold, what was the ratio of sales of spanner sets to hammers?

18:27	13:3	27:6	11:3	9:5
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Exercise 2. What are the measurements for A _____ B _____
C _____?



Exercise 3. What is the measurement for A _____?

