

# YEAR 8 MATHEMATICS

## Specimen Test

### COURSE/LEVEL

NSW Secondary High School Year 8 Mathematics.

### TOPICS

- Decimals
- Percentages
- Pythagoras Theorem

TOTAL TIME: 60 MINUTES

### INSTRUCTIONS

Calculators may NOT be used in Part A.  
All answers to be written in the spaces indicated.  
The test consists of four parts:

Part A	10 marks	(no calculator)
Part B	15 marks	
Part C1	15 marks	
Part C2	15 marks	
Total	55 marks	

(Note: Advanced students could leave out Part C1 and other students could leave out Part C2. The total time allowed would then reduce to 45 minutes.)

### Part A

- You are given exactly 10 minutes to answer Part A.
- Attempt **ALL** questions. Write your answers in the spaces provided.

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A1  $0.32 + 100 =$

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A2  $0.2 \div 2 =$

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A3 Find the difference between 50% of \$50 and 100% of \$100.

- |                            |                             |
|----------------------------|-----------------------------|
| <input type="radio"/> \$25 | <input type="radio"/> \$50  |
| <input type="radio"/> \$75 | <input type="radio"/> \$100 |

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A4 In 142.67, the digit 7 stands for

- |                                    |                                |
|------------------------------------|--------------------------------|
| <input type="radio"/> 7 ones       | <input type="radio"/> 7 tenths |
| <input type="radio"/> 7 hundredths | <input type="radio"/> 7 tens   |

A5 Steven earned \$40 working after school for a week. He spent \$5 on the first day. What fraction of his money had he left ?

- $\frac{1}{8}$                         $\frac{7}{8}$
- $\frac{4}{5}$                         $\frac{1}{5}$
- 

A6 How many times bigger is  $2\frac{3}{4}$  compared to  $\frac{1}{8}$  ?

- 11                       33
- 22                       none of these
- 

A7  $\frac{0.3 \times 0.02}{0.3} =$

- 0.2                       2
- 0.02                       0.002
- 

A8 Josette has twelve 5c coins, eight 10c coins, seven 20c coins, five 50c coins and four \$2 coins. Josette's coins add up to

- \$10.80                       \$12.40
- \$12.50                       \$13.30
- 

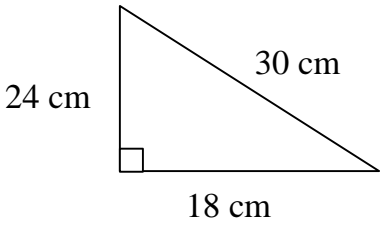
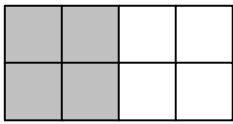
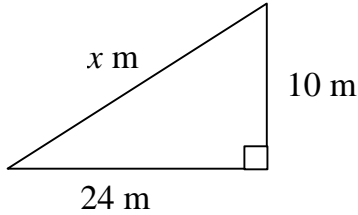
A9 An athlete leaves the stadium. He runs 4 km due North, then East for 8 km, then South for 4 km. How far is the athlete from the stadium?

- 4 km                       8 km
- 12 km                       6 km
- 

A10 Two glasses together contain 300 mL of water. The first glass contains 50 mL more than the second glass. How much water does the first glass contain?

- 200 mL                       175 mL
- 250 mL                       150 mL
-

**PART B:** Write your answers in the space provided. Show your working where necessary. **(15 marks)**

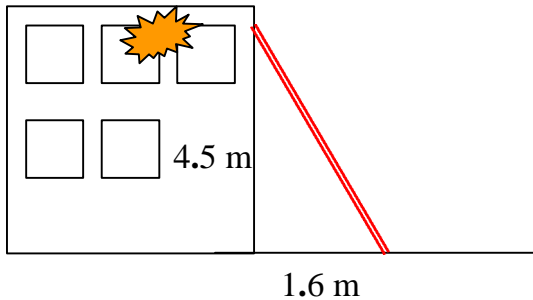
	<b>QUESTION</b>
1	Write $\frac{3}{16}$ as a decimal.
2	$\sqrt{289} =$
3	In a bouquet, 10% of the flowers are red, 55% are blue and the remainder are yellow. What percentage are yellow?
4	<div style="display: flex; align-items: center;"> <div style="margin-right: 20px;">  </div> <div> <p>How long is the hypotenuse in this triangle?</p> </div> </div>
5	Write 72% as a fraction in simplest form.
6	<div style="display: flex; align-items: center;"> <div style="margin-right: 20px;">  </div> <div> <p>What percentage is shaded?</p> </div> </div>
7	<div style="display: flex; justify-content: space-between;"> <div>  </div> <div> <p>Find the value of <math>x</math>. <span style="float: right;">(2 marks)</span></p> </div> </div>
8	Express 208% as a decimal.

**QUESTION**

9 Mary received a mark of 32 out of a possible 40 marks. Express Mary's mark as a percentage.

10 Helen has a sales job where she is paid 12% commission on her sales. Calculate Helen's commission if her sales for the week totalled \$3029. (Answer correct to the nearest cent.)

12 A fire fighter places a ladder on a window sill 4.5 m above the ground. If the foot of the ladder is 1.6 m from the wall calculate the length of the ladder correct to 1 decimal place. (2 marks)



13 Target advertised a 15% discount on the marked price of all swimwear. (2 marks)

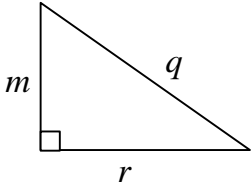
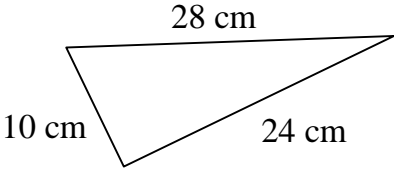
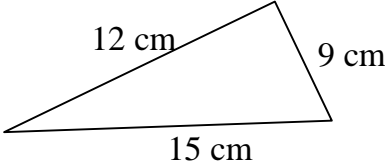
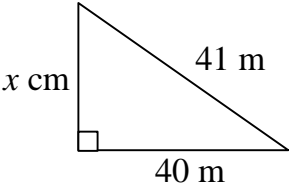
(a) Calculate the discount of a bikini with a marked price of \$26.

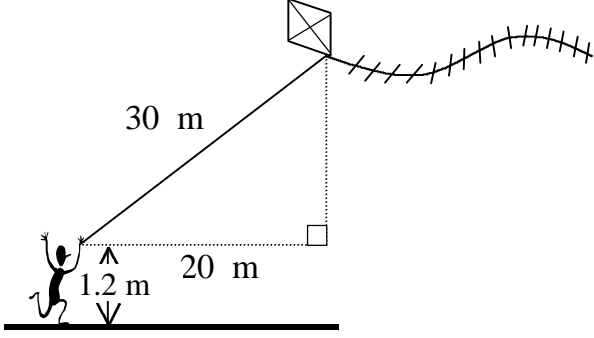
(b) How much does the bikini cost?

Name: \_\_\_\_\_

Teacher: \_\_\_\_\_

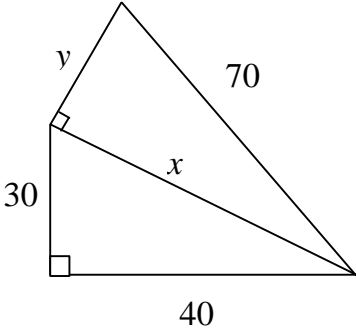
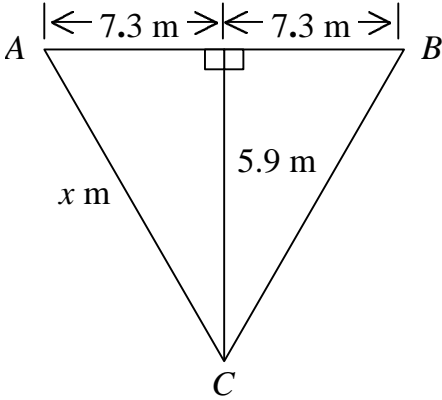
**PART C1:** Write your answers in the space provided. Show your working where necessary. **(15 marks)**

	QUESTION
1	<div style="display: flex; align-items: center;"> <div style="margin-right: 20px;">  </div> <div> <p>Circle the correct statement.</p> <p>A <math>q^2 = r^2 - m^2</math>                      B <math>m^2 = r^2 - q^2</math></p> <p>C <math>q^2 = r^2 + m^2</math>                      D <math>m^2 = r^2 + q^2</math></p> </div> </div>
2	Express 0.682 as a percentage.
3	Express $16\frac{1}{2}\%$ as a decimal.
4	<div style="display: flex; justify-content: space-around; align-items: flex-start;"> <div style="text-align: center;"> <p>Triangle 1</p>  </div> <div style="text-align: center;"> <p>Triangle 2</p>  </div> </div> <p style="text-align: right;">(2 marks)</p> <p>Which of these triangles are right angled?</p> <p>Give a clear reason for your answer.</p>
5	<div style="display: flex; align-items: center;"> <div style="margin-right: 20px;">  </div> <div> <p>Find the value of <math>x</math>. <span style="float: right;">(2 marks)</span></p> </div> </div>

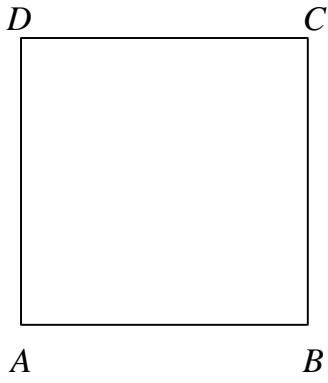
QUESTION	
6	Decrease \$610 by 5%.
7	<p>Jeffrey is holding a kite string 1.2 metres above the ground. How high is the kite <u>above</u> the ground? (3 marks)</p>  <p>The diagram shows a person on the ground holding a kite string. The string is 30 m long. The person's hands are 1.2 m above the ground. The horizontal distance from the person to the kite is 20 m. A right-angled triangle is formed by the string, the horizontal distance, and the vertical height from the person's hands to the kite. The kite is 1.2 m above the ground, and the string is 30 m long. The horizontal distance is 20 m.</p>
8	<p>A chocolate company packs bags of assorted chocolates for the Easter Show. The Sample Bag consists of (2 marks)</p> <p>2 Mars bars 3 Flake bars 4 Picnic bars 3 Crunchy bars</p> <p>What percentage of the show bag is:</p> <p>(i) Crunchy bars</p> <p>(ii) Flake and Picnic bars</p>

	<b>QUESTION</b>
9	<p>Find the (simple) interest earned on \$1785 at 7% per annum for: <span style="float: right;">(2 marks)</span></p> <p>(i) 1 year</p> <p>(ii) 18 years</p>

**PART C2:** Write your answers in the space provided. Show your working where necessary. **(15 marks)**

QUESTION	
1	<p>Find the values of <math>x</math> and <math>y</math> (correct to one decimal place). <span style="float: right;">(3 marks)</span></p> 
2	<p>Write 50% of 50% as a decimal. <span style="float: right;">(1 mark)</span></p>
3	<p style="text-align: right;">(3 marks)</p>  <p>(a) Find the value of <math>x</math> correct to 1 decimal place.</p> <p>(b) Find the perimeter of <math>\triangle ABC</math></p>



<b>QUESTION</b>	
4	<p>James spent 40% of his money and then found that 50% of the remainder was 60 cents.</p> <p>(i) How much was the remainder? (3 marks)</p>  <p>(ii) How much did he have at first?</p>
5	<p>Increase \$100 by 10% and decrease the result by 10%. What is the final result? (2 marks)</p>
6	<p><math>A</math>, <math>B</math>, <math>C</math> and <math>D</math> are the four corners of a square as shown. The side length of the square is 10 cm.</p> <p>An ant took 2 minutes to walk along the perimeter of the square from <math>A</math> to <math>B</math> and then to <math>C</math>. A fellow ant walked directly from <math>A</math> to <math>C</math> at the same speed as the first ant. How long did its journey take? (Answer to the nearest second).</p> <div style="text-align: center;"></div> <p style="text-align: right;">(3 marks)</p>