EXAM PAPER

Maths Year 10 — Practice Exam 3

PREVIEW
This file has the first 30 of the 60 questions in this paper. The rest is locked: it comes with a PrepNest plan, or with the paper itself for VCE.

Total time: 80 minutes

SECTIONS IN THIS PAPER

- Numeracy — non-calculator — 40 min (no calculator)
- Numeracy — calculator — 40 min (calculator allowed)

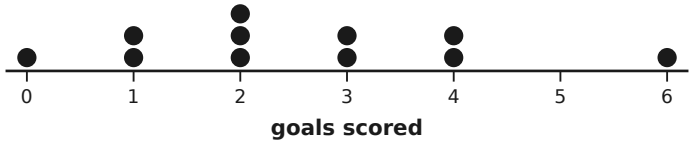
INSTRUCTIONS

Answer every question you can. Write your working in the space provided for long-answer questions. Marking guidance and full explanations are provided in the separate answer key.

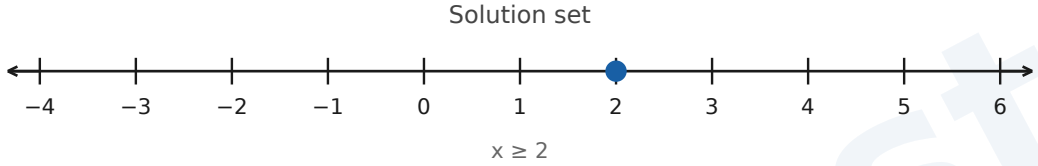
Numeracy — non-calculator

40 minutes • No calculator

1. For the dot plot below, write down the range.



2. The number line below marks the solution of an inequality. That inequality is



A. $x \geq 2$

B. $x > 2$

C. $x \leq 2$

D. $x = 2$

3. A cubical shipping crate has a volume of 27 m³. The length of one edge is

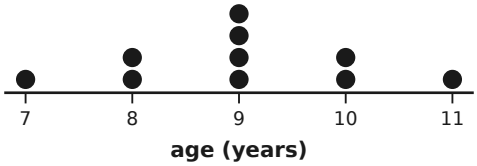
A. 9 m

B. 3 m

C. 27 m

D. 81 m

4. For the dot plot below, write down the number of children at the party.



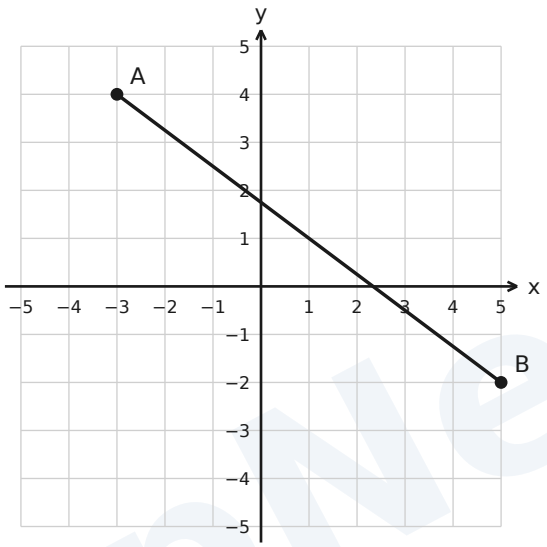
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5. The table below shows the results of a survey. Write down how many people were surveyed altogether.

Survey results

	Yes	No
Under 18	24	16
18 and over	31	29

6. What are the coordinates of the midpoint of AB?



A. (4, 3)

B. (2, 2)

C. (−4, 3)

D. (1, 1)

7. Solve simultaneously: $3x + 2y = 16$ and $x - 2y = 0$.

A. x = 2, y = 4

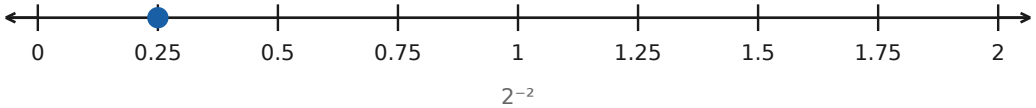
B. x = 4, y = 6

C. x = 4, y = 2

D. x = 6, y = 3

8. The number line below marks the value of 2^{-2}.

Powers of 2



2^{-2}

A. −4

B. 4

C. 0.25

D. 0.5

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9. What is the volume of a sphere with a radius of 3 cm, in terms of π?

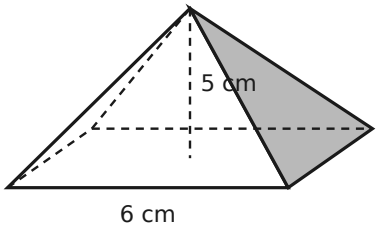
A. 12π cm³

B. 27π cm³

C. 36π cm³

D. 108π cm³

10. A pyramid has a square base of side 6 cm and a perpendicular height of 5 cm.
What is its volume, in cubic centimetres?



11. For mutually exclusive events A and B with Pr(A) = 0.35 and Pr(B) = 0.25, Pr(A or B) is

A. 0.0875

B. 0.1

C. 0.6

D. 0.9

12. For the survey below, the proportion of people under 18 who answered Yes is

Survey results

	Yes	No
Under 18	24	16
18 and over	31	29

A. 0.24

B. 0.6

C. 0.44

D. 0.4

13. A square has an area of 48 cm². Its side length, in simplest surd form, is

A. 2√12 cm

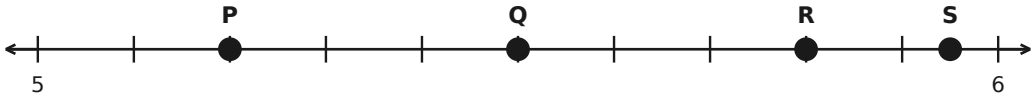
B. 24 cm

C. 6√2 cm

D. 4√3 cm

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14. Which point is closest to √30?



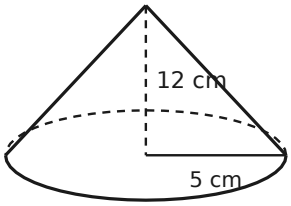
A. P

B. Q

C. R

D. S

15. What is the slant height of this cone, in centimetres?



16. A cube has edge length $3x^2y$. Its volume, simplified, is

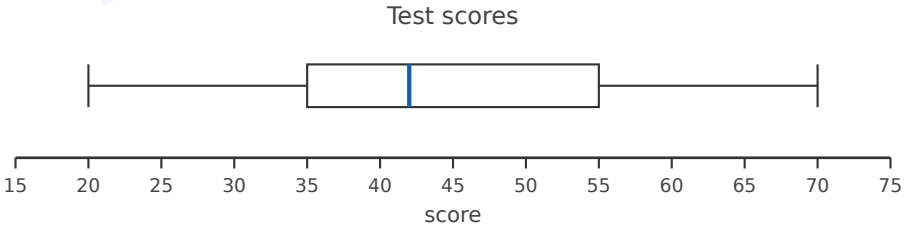
A. $27x^6y^3$

B. $9x^6y^3$

C. $27x^5y^3$

D. $3x^6y^3$

17. About what percentage of the scores are between 35 and 70?



A. 25%

B. 50%

C. 75%

D. 100%

18. Which is $(x^4)^{(1/2)} \times x^3$ written as a single power of x?

A. x^6

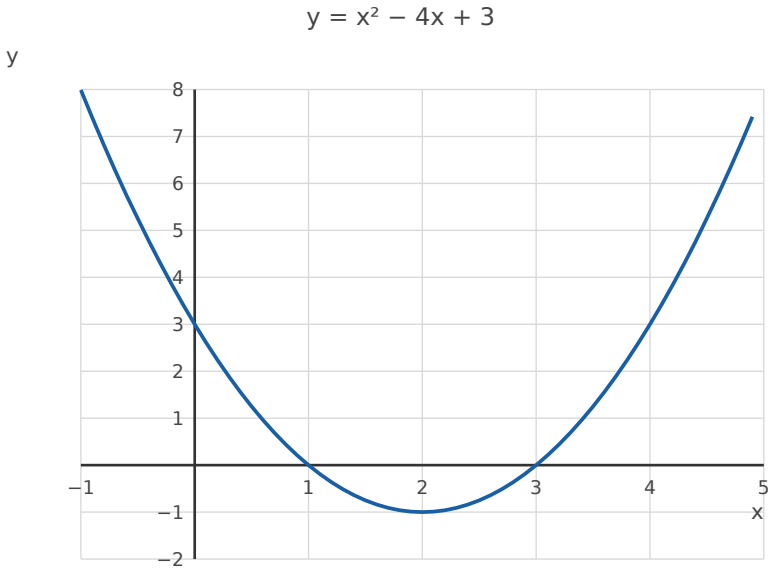
B. $x^{(7/2)}$

C. x^{11}

D. x^5

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19. The graph below shows $y = x^2 - 4x + 3$. Write down the x-coordinate of its turning point.



20. Factorise fully: $3x^2 - 12$.

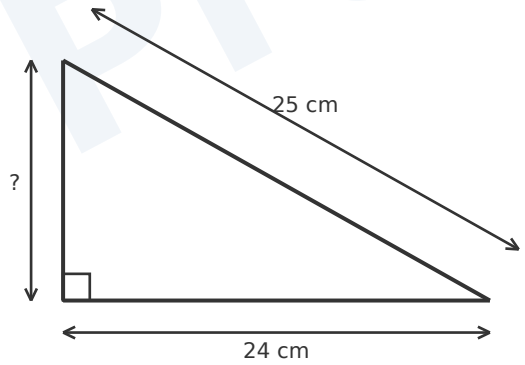
A. $3(x^2 - 4)$

B. $(3x - 6)(x + 2)$

C. $3(x - 4)(x + 3)$

D. $3(x - 2)(x + 2)$

21. The right-angled triangle below has the measurements shown. Write down the length of the third side, in centimetres.



22. A stone is dropped from a bridge. Its height above the water, in metres, after t seconds is $h(t) = 45 - 5t^2$. Its height after 2 seconds is

A. 35 m

B. 5 m

C. 25 m

D. 45 m

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23. A square photo is enlarged so its area increases from 4 cm² to x^2 cm². If $x^2 - 4 = 0$ describes the case where the area is unchanged, the possible values of x are

A. $x = 4$ or $x = -4$

B. $x = 2$ or $x = -2$, and only $x = 2$ is a valid length

C. $x = 2$ only

D. $x = 0$

24. The table below shows three numbers written as powers. Write down the letter of the largest.

Three values

Value	A	B	C
Expression	2^5	3^3	5^2

25. A rectangular garden is 3 m longer than it is wide, and its area is 40 m². If the width is w metres, the equation to solve is

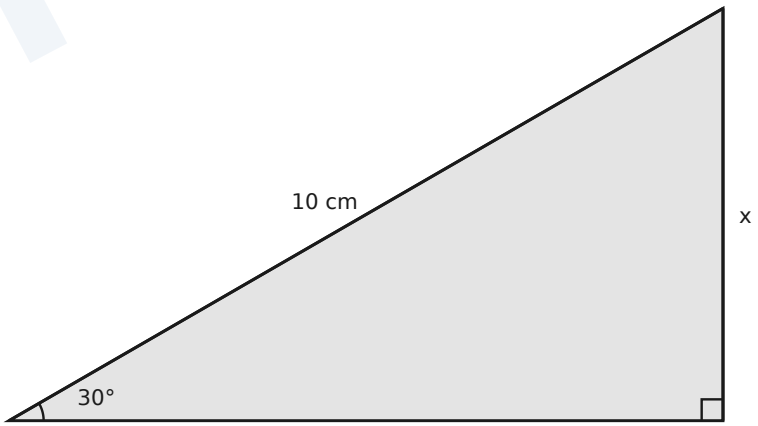
A. $w^2 + 3w - 40 = 0$

B. $w^2 + 3w + 40 = 0$

C. $2w + 3 = 40$

D. $w^2 - 3w - 40 = 0$

26. Find the exact value of x, in centimetres. ($\sin 30° = 1/2$)



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27. A cube has edges 2 cm long.
What is the exact length of a diagonal running from one corner through the middle of the cube to the opposite corner?

A. $2\sqrt{3}$ cm

B. $2\sqrt{2}$ cm

C. 6 cm

D. 4 cm

28. Each interior angle of a regular polygon is 144°.
How many sides does it have?

29. An equilateral triangle has sides of 2 cm. Its exact height is

A. $2\sqrt{3}$ cm

B. $\sqrt{3}$ cm

C. 1 cm

D. $\sqrt{2}$ cm

30. Which is $3\sqrt{5} \times 2\sqrt{10}$ in simplest surd form?

A. $5\sqrt{50}$

B. $6\sqrt{15}$

C. $30\sqrt{2}$

D. $60\sqrt{5}$

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60.

30 questions locked, up to question 60.

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PREVIEW

That’s the end of the preview

You’ve seen the first 30 of the 60 questions in Maths Year 10 — Practice Exam 3. The full paper is worth 60 marks.

STILL TO COME	QUESTIONS	MARKS
Numeracy — calculator	30	30

The full paper comes with

- Every question, printed exactly like the ones in this preview
- The complete answer key, with the working behind every mark
- A topic report after marking, showing what to practice next

Get the full paper at

prepnest.com.au/practice/exams/math-year_10-3

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