EXAM PAPER

Maths Year 10 — Practice Exam 4

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)

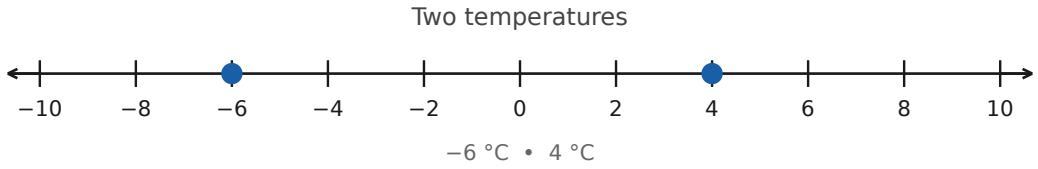
INSTRUCTIONS

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.

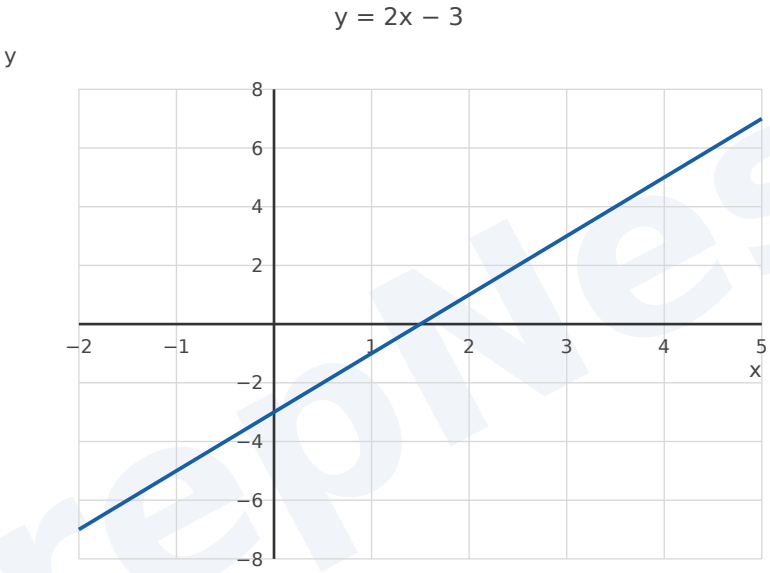
Numeracy — non-calculator

40 minutes • No calculator

1. The number line below shows two marked values. Write down the distance between them.



2. The graph below shows y = 2x − 3. Write down its gradient.



3. A square garden has an area of 16 m². Written as a power, its side length is 16^(1/2), which equals

A. 8 m

B. 32 m

C. 256 m

D. 4 m

4. A right-angled triangle has legs of 6 cm and 8 cm. The length of the hypotenuse is

A. 14 cm

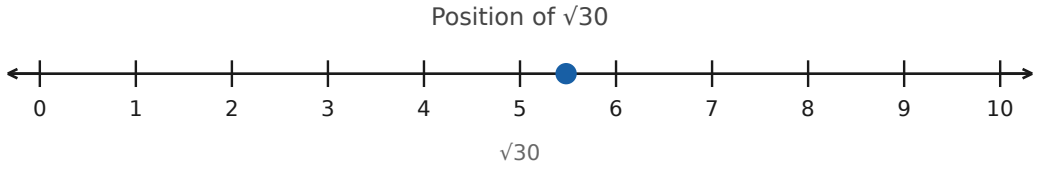
B. √14 cm

C. 48 cm

D. 10 cm

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5. On the number line below, the marked point lies between two consecutive whole numbers. Write down the smaller of those two whole numbers.



6. Two fair coins are tossed.
What is the probability of getting at least one tail?

A. 3/4

B. 1/2

C. 1/4

D. 2/3

7. Which equation describes a quantity that starts at 200 and halves each year?

A. $y = 200 \times 0.5^{x}$

B. $y = 200 - 0.5x$

C. $y = 200 \times 1.5^{x}$

D. $y = 0.5 \times 200^{x}$

8. A cylinder has radius r and height h. If the radius is doubled and the height is unchanged, the volume is

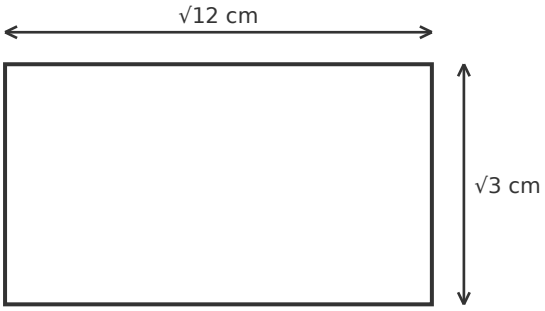
A. twice as large

B. four times as large

C. eight times as large

D. unchanged

9. The rectangle below has the dimensions shown. Write down its area, in square centimetres.



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10. The times taken by a group of runners have a lower quartile of 10 minutes and an upper quartile of 18 minutes. Any time greater than which value would be shown as an outlier?

A. 26 minutes

B. 30 minutes

C. 22 minutes

D. 18 minutes

11. The turning point of $y = (x + 4)^2 - 7$ is

A. $(4, -7)$

B. $(-4, 7)$

C. $(7, -4)$

D. $(-4, -7)$

12. The bearing of B from A is 070°.
What is the bearing of A from B?

A. 070°

B. 110°

C. 250°

D. 290°

13. A sector of a circle has an angle of 90° and radius 4 cm. Its exact area is

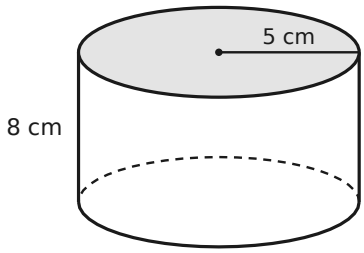
A. 16π cm²

B. 2π cm²

C. 8π cm²

D. 4π cm²

14. What is the total surface area of this closed cylinder, in terms of π?



A. 80π cm²

B. 105π cm²

C. 130π cm²

D. 200π cm²

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15. Simplify $\sqrt{75} - \sqrt{27}$, giving your answer in simplest surd form.

A. $2\sqrt{3}$

B. $\sqrt{48}$

C. $4\sqrt{3}$

D. $\sqrt{102}$

16. The table below shows the mass of three parcels in scientific notation. Write down the letter of the heaviest parcel.

Parcel masses

Parcel	A	B	C
Mass (kg)	3.2×10^2	9.8×10^1	1.1×10^3

17. What is the gradient of a line perpendicular to $y = 2x - 5$?

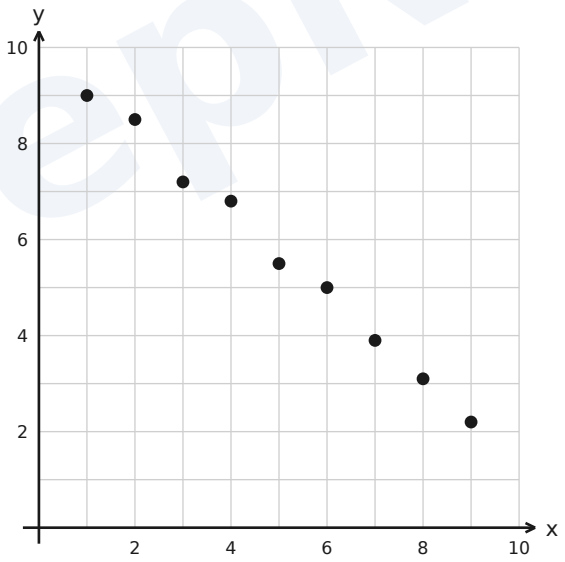
A. -2

B. $-1/2$

C. $1/2$

D. 2

18. Which best describes the association shown in the scatterplot?



A. a weak negative association

B. a strong positive association

C. no clear association

D. a strong negative association

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19. Which is $x^2 - 9x + 20$ factorised?

A. $(x - 4)(x - 5)$

B. $(x + 4)(x + 5)$

C. $(x - 2)(x - 10)$

D. $(x - 4)(x + 5)$

20. The exact value of sin(60°) is

A. $\sqrt{3}/2$

B. $1/2$

C. $\sqrt{2}/2$

D. $\sqrt{3}$

21. A bacterium is about 0.000 002 metres across. Written in scientific notation, this is

A. 2×10^{-6} m

B. 2×10^{6} m

C. 2×10^{-5} m

D. 20×10^{-7} m

22. What is the value of 27^(2/3)?

23. Which inequality gives all the solutions of $3 - 2x \leq 7$?

A. $x \leq -2$

B. $x \geq -2$

C. $x \geq 2$

D. $x \leq 5$

24. A rectangle measures $\sqrt{50}$ cm by $\sqrt{8}$ cm. Written in simplest surd form, its area is

A. $10\sqrt{2}$ cm²

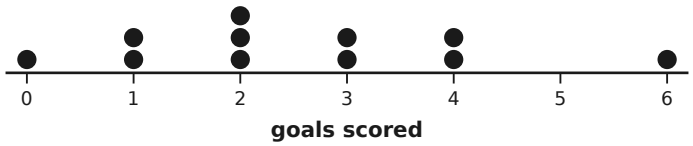
B. $\sqrt{58}$ cm²

C. 20 cm²

D. 40 cm²

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25. For the dot plot below, which statement is correct?



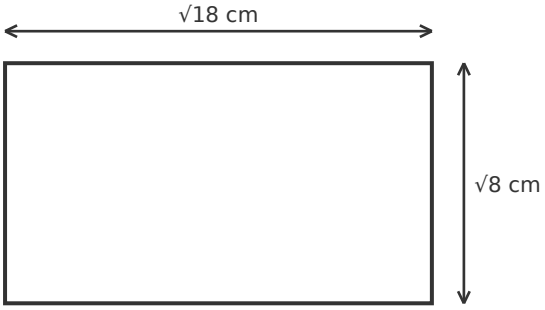
A. The distribution is symmetric

B. The distribution is negatively skewed

C. The mode is 4

D. The distribution is positively skewed with a possible outlier at 6

26. The rectangle below has the dimensions shown. Its exact perimeter is



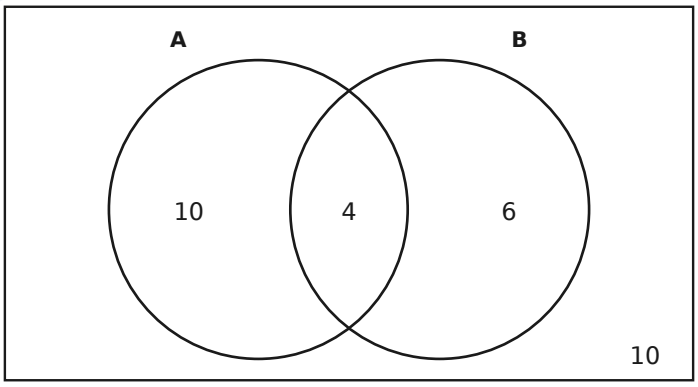
A. √52 cm

B. 10√2 cm

C. 5√2 cm

D. 12√2 cm

27. The numbers show how many outcomes are in each region.
What is the probability of A, given that B has occurred?



A. 2/15

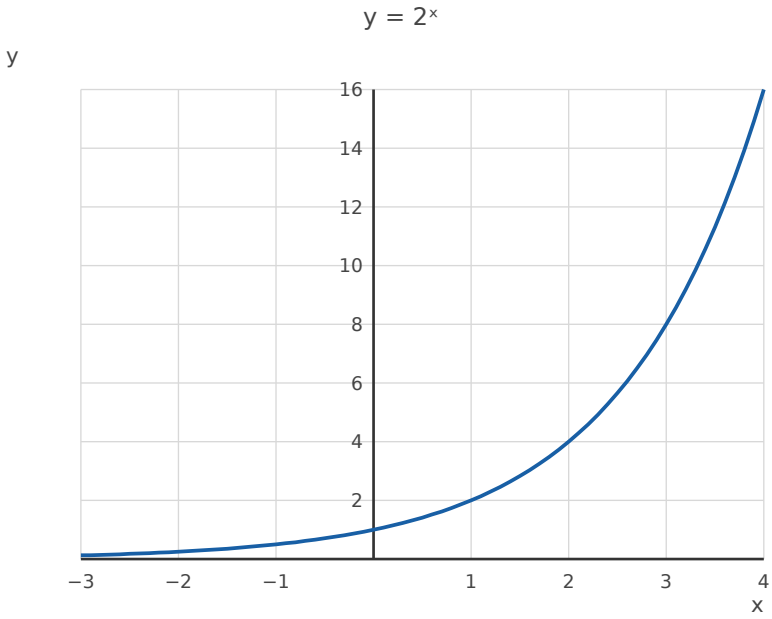
B. 2/5

C. 2/7

D. 1/3

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28. The graph below is of $y = 2^x$. As x decreases, the curve



A. crosses the x-axis at x = 0

B. becomes negative

C. levels out at y = 1

D. approaches zero without ever reaching it

29. Using the five-number summary below, any value greater than which number would be shown as an outlier?

Five-number summary

Minimum	Q1	Median	Q3	Maximum
4	11	16	23	31

A. 35

B. 46

C. 41

D. 29

30. A car travels 150 km at 60 km/h and then another 150 km at 100 km/h. What is its average speed for the whole trip?

A. 70 km/h

B. 75 km/h

C. 80 km/h

D. 160 km/h

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59.

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 4. 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

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