YUKON FOUNDATIONS OF MATHEMATICS 12 (MFOM-12) · FINAL EXAM · 50 QUESTIONS

# Final Exam — Practice Test

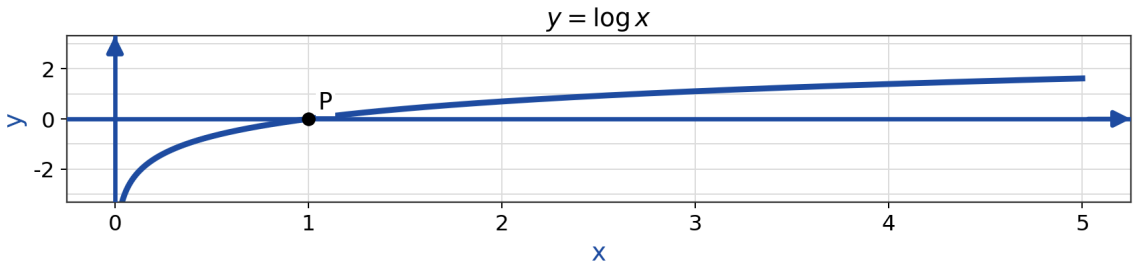
This practice test was made by AI and there may be mistakes. If a question or answer looks wrong, use the Flag a mistake button to let Brett know so he can fix it.

**1** **For the circle $(x - 2)^2 + (y + 5)^2 = 36$, the centre and radius are**

- A (2, 5), 6
- B (2, -5), 36
- C (-2, -5), 6
- D (2, -5), 6

Understand It with Pulse | Flag a mistake

**2** **The graph shows y = log x. The value of y at the point P is**




- **A** 1
- **B** -1
- **C** 2
- **D** 0

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**3** **The number of ordered choices of 3 students from 5, with no repeats, is ____.**

ANSWER _____

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4 **An amount of 1000 dollars grows by 5 percent per year, compounded. After 2 years, the amount, in dollars, is ____.**

ANSWER _____

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5 **The foci of the ellipse $\frac{x^2}{25} + \frac{y^2}{9} = 1$ are**

A (0, ± 5)

B (± 5, 0)

C (0, ± 4)

D (± 4, 0)

Understand It with Pulse | Flag a mistake

6 **The value of $\log_2 32$ is ____.**

ANSWER _____

Understand It with Pulse | Flag a mistake

**7** The probability that two fair dice sum to 7 is

- **A** $\frac{1}{12}$
- **B** $\frac{1}{6}$
- **C** $\frac{1}{4}$
- **D** $\frac{1}{3}$

Understand It with Pulse | Flag a mistake

**8** A mortgage payment is 1200 dollars per month for 25 years. The total paid, in dollars, is ____.

ANSWER _____

Understand It with Pulse | Flag a mistake

**9** The vertices of the ellipse $\frac{x^2}{16} + \frac{y^2}{4} = 1$ are

- A (± 4, 0)
- B (0, ± 4)
- C (± 2, 0)
- D (0, ± 2)

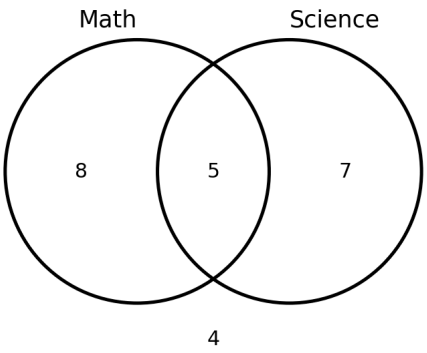
Understand It with Pulse | Flag a mistake

**10** A correlation coefficient of -0.15 shows a

- A strong negative correlation
- B weak positive correlation
- C strong positive correlation
- D weak negative correlation

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**11** **The diagram shows students who take Math, Science, or neither. The number who take Math only is**




A 5

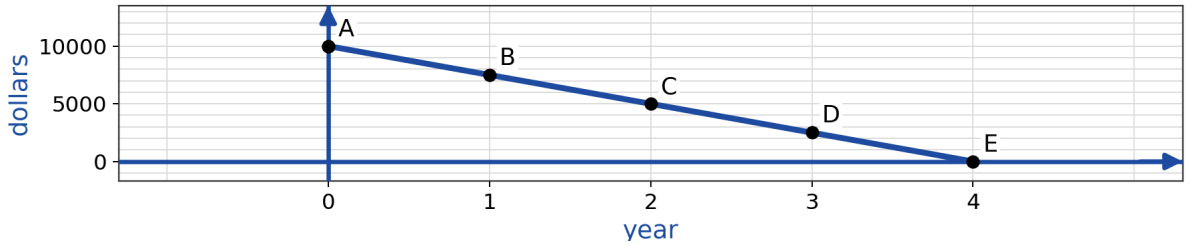
B 7

C 8

D 13

Understand It with Pulse | Flag a mistake

**12** **The graph shows a loan balance falling by equal amounts each year. The balance, in dollars, after 2 years is**




- **A** 5000
- **B** 2500
- **C** 7500
- **D** 10000

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**13** **The vertex of the parabola $y = 2(x - 3)^2 - 1$ is**

- **A** (3, -1)
- **B** (-3, -1)
- **C** (3, 1)
- **D** (-3, 1)

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14 **The midline of $y = 2\cos x + 1$ is**

A $y = 1$

B $y = 0$

C $y = 2$

D $y = 3$

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15 **A menu offers 4 main dishes, 3 desserts and 5 drinks. The number of meals with one of each is ____.**

ANSWER _____

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16 **Simple interest on 5000 dollars at 8 percent per year for 2 years, in dollars, is ____.**

ANSWER _____

Understand It with Pulse | Flag a mistake

**17** **The directrix of the parabola $x^2 = -8y$ is**

- **A** $y = -2$
- **B** $x = 2$
- **C** $y = 2$
- **D** $x = -2$

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**18** **For a line of best fit with slope 2.5, an increase of 1 in x is linked to**

- **A** no change in y
- **B** an increase of 2.5 in y
- **C** a decrease of 2.5 in y
- **D** an increase of 1 in y

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**19** If the odds in favour of a team are 3 to 2, the probability the team wins is

A $\frac{2}{3}$

B $\frac{3}{2}$

C $\frac{3}{5}$

D $\frac{2}{5}$

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**20** Monthly income is 4000 dollars. Expenses are rent 1200, food 500, transport 300 and other costs 800 dollars. Monthly savings, in dollars, are ____.

ANSWER _____

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**21** The conic $\frac{x^2}{4} - \frac{y^2}{9} = 1$ is a

A circle

B ellipse

C parabola

D hyperbola

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**22** A quadratic model is $y = x^2 - 2x + 1$. The predicted value when $x = 4$ is _____.

ANSWER _____

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**23** The probability that two fair dice are both even is

- A $\frac{1}{2}$
- B $\frac{1}{3}$
- C $\frac{1}{4}$
- D $\frac{1}{6}$

Understand It with Pulse | Flag a mistake

**24** In the early years of a mortgage, most of each payment goes to

- A the principal
- B property taxes only
- C insurance only
- D interest

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25 **A Koch curve of length 12 is redrawn once. Each segment is replaced by 4 segments each one third as long. The new total length is ____.**

ANSWER _____

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26 **The domain of y = log(x - 2) is**

A x > 2

B x > 0

C x ≥ 2

D all x

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27 **A spinner has 8 equal sections, 3 of them red. The probability of landing on red is**

A $\frac{1}{8}$

B $\frac{3}{8}$

C $\frac{5}{8}$

D $\frac{3}{4}$

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28 **A buyer buys 10 shares at 50 dollars each and sells them at 65 dollars each. The profit, in dollars, is ____.**

ANSWER _____

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**29** The centre of the hyperbola $\frac{(x - 1)^2}{4} - \frac{(y + 2)^2}{9} = 1$ is

- **A** (1, 2)
- **B** (-1, -2)
- **C** (-1, 2)
- **D** (1, -2)

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**30** The period of y = cos 2x is

- **A** $\frac{\pi}{2}$
- **B** $\pi$
- **C** $2\pi$
- **D** $4\pi$

Understand It with Pulse | Flag a mistake

31 **The number of ordered choices of 2 students from 6, with no repeats, is ____.**

ANSWER _____

Understand It with Pulse | Flag a mistake

32 **Simple interest on 2000 dollars at 3 percent per year for 4 years, in dollars, is ____.**

ANSWER _____

Understand It with Pulse | Flag a mistake

33 **The conic $9x^2 + 9y^2 = 81$ is a**

A circle

B ellipse

C parabola

D hyperbola

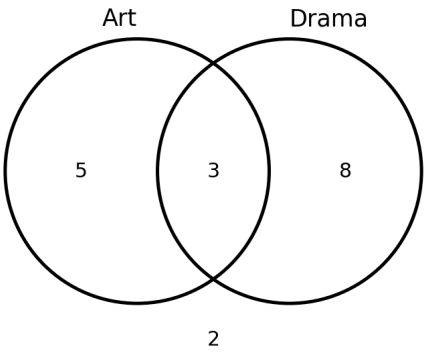
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**34** If $f(x) = 4 \cdot 3^x$, then the value of $f(2)$ is ____.

ANSWER _____

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**35** The diagram shows students who take Art, Drama, or neither. The total number who take Art is




A 3

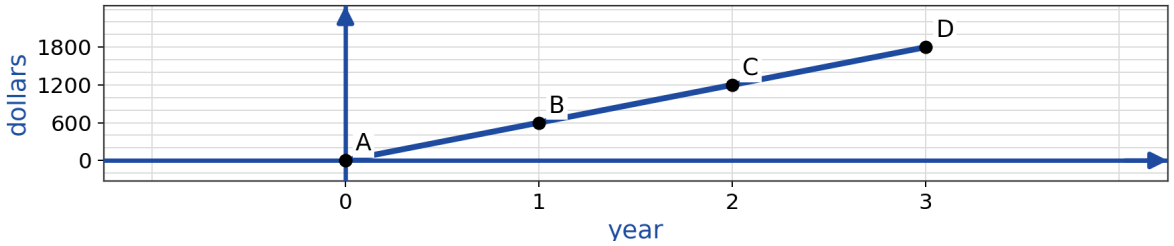
B 5

C 8

D 13

Understand It with Pulse | Flag a mistake

**36** **The graph shows savings growing by 600 dollars each year. The savings, in dollars, after 2 years are**




- **A** 600
- **B** 1200
- **C** 1800
- **D** 2400

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**37** **The length of the major axis of $\frac{x^2}{36} + \frac{y^2}{16} = 1$ is**

- **A** 6
- **B** 8
- **C** 12
- **D** 16

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38 **The period of $y = \sin 2x$ is**

- A $\frac{\pi}{2}$
- B $\pi$
- C $2\pi$
- D $4\pi$

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39 **A game pays 20 dollars with probability $\frac{1}{4}$ and 0 dollars otherwise. The expected value, in dollars, is ____.**

ANSWER _____

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40 **Simple interest on 1500 dollars at 6 percent per year for 3 years, in dollars, is ____.**

ANSWER _____

Understand It with Pulse | Flag a mistake

41 **The vertices of the hyperbola $\frac{y^2}{25} - \frac{x^2}{4} = 1$ are**

A (± 5, 0)

B (0, ± 2)

C (0, ± 5)

D (± 2, 0)

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42 **A correlation coefficient of 0.05 shows**

A a strong positive correlation

B a strong negative correlation

C almost no linear correlation

D a perfect negative correlation

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43 **A two-digit number has a non-zero first digit. The number of such two-digit numbers is ____.**

ANSWER _____

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44 **Rent is an example of a**

A fixed expense

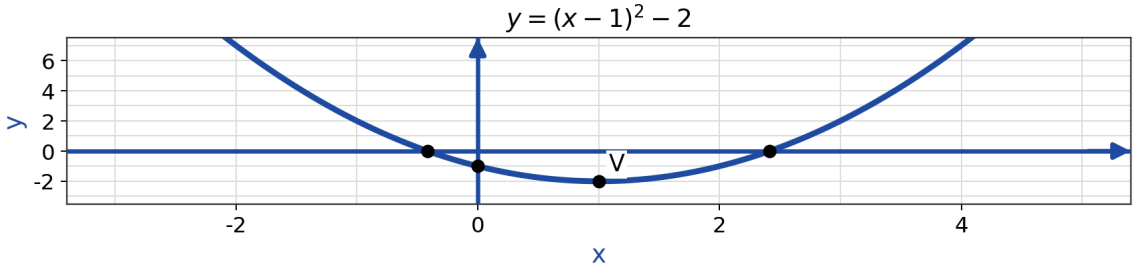
B variable expense

C one-time windfall

D source of income

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**45** **The graph shows the parabola $y = (x - 1)^2 - 2$. Its vertex, marked V, is**




A (1, 2)

B (-1, -2)

C (1, -2)

D (-1, 2)

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**46** **An amount of 100 dollars grows by 5 percent per year, compounded. After 2 years, the amount, in dollars, is ____.**

ANSWER _____

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**47** **The probability of drawing a face card from a standard 52-card deck is**

- **A** $\frac{1}{13}$
- **B** $\frac{3}{13}$
- **C** $\frac{1}{4}$
- **D** $\frac{4}{13}$

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**48** **A buyer buys 20 shares at 25 dollars each and sells them at 32 dollars each. The profit, in dollars, is ____.**

ANSWER _____

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49 **Which of the following shapes is self-similar**

A Koch snowflake

B rectangle

C straight line

D ordinary circle

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50 **For a line of best fit with a negative slope, as x increases, y tends to**

A increase

B decrease

C stay the same

D reach zero at once

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# ANSWER KEY

| | | | | | |
|---|---|---|---|---|---|
| **1.** | D | **18.** | B | **35.** | C |
| **2.** | D | **19.** | C | **36.** | B |
| **3.** | 60 | **20.** | 1200 | **37.** | C |
| **4.** | 1102.5 | **21.** | D | **38.** | B |
| **5.** | D | **22.** | 9 | **39.** | 5 |
| **6.** | 5 | **23.** | C | **40.** | 270 |
| **7.** | B | **24.** | D | **41.** | C |
| **8.** | 360000 | **25.** | 16 | **42.** | C |
| **9.** | A | **26.** | A | **43.** | 90 |
| **10.** | D | **27.** | B | **44.** | A |
| **11.** | C | **28.** | 150 | **45.** | C |
| **12.** | A | **29.** | D | **46.** | 110.25 |
| **13.** | A | **30.** | B | **47.** | B |
| **14.** | A | **31.** | 30 | **48.** | 140 |
| **15.** | 60 | **32.** | 240 | **49.** | A |
| **16.** | 800 | **33.** | A | **50.** | B |
| **17.** | C | **34.** | 36 | | |

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