SASKATCHEWAN CALCULUS 30 · UNIT D

Optimization and Related Rates — Practice Test

Saskatchewan Calculus 30 • 25 questions

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 **A farmer has 60 m of fencing to enclose a rectangular field against a straight river, so only three sides need fencing. The maximum area, in m², is**

ANSWER _____

Understand It with Pulse | Flag a mistake

2 **A sphere has radius 5 cm and its radius grows at 3 cm per second. Using pi equals 3.14, the rate of change of volume, in cm³ per second, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

3 **A rectangle has width 24 m and length twice its width. Its area, in m², is**

ANSWER _____

Understand It with Pulse | Flag a mistake

4 **A sphere has radius 10 cm and its radius grows at 3 cm per second. Using pi equals 3.14, the rate of change of volume, in cm³ per second, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

5 **A sphere has radius 10 cm and its radius grows at 2 cm per second. Using pi equals 3.14, the rate of change of volume, in cm³ per second, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

6 **A square sheet of side 36 cm has squares cut from its corners to form an open box. The cut size that maximizes volume, in centimetres, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

7 **A sphere has radius 15 cm and its radius grows at 2 cm per second. Using pi equals 3.14, the rate of change of volume, in cm³ per second, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

8 **A rectangle has perimeter 40 m. Its maximum possible area, in m², is**

ANSWER _____

Understand It with Pulse | Flag a mistake

9 **A farmer has 100 m of fencing to enclose a rectangular field against a straight river, so only three sides need fencing. The maximum area, in m², is**

ANSWER _____

Understand It with Pulse | Flag a mistake

10 **A rectangle has width 16 m and length twice its width. Its area, in m², is**

ANSWER _____

Understand It with Pulse | Flag a mistake

11 **A rectangle has perimeter 120 m. Its maximum possible area, in m², is**

ANSWER _____

Understand It with Pulse | Flag a mistake

12 **A rectangle has width 20 m and length twice its width. Its area, in m², is**

ANSWER _____

Understand It with Pulse | Flag a mistake

13 **A rectangle has width 8 m and length twice its width. Its area, in m², is**

ANSWER _____

Understand It with Pulse | Flag a mistake

14 **Two numbers sum to 50. Their maximum possible product is**

ANSWER _____

Understand It with Pulse | Flag a mistake

15 **A square sheet of side 18 cm has squares cut from its corners to form an open box. The cut size that maximizes volume, in centimetres, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

16 **A square sheet of side 12 cm has squares cut from its corners to form an open box. The cut size that maximizes volume, in centimetres, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

17 **Two numbers differ by 12. Their minimum possible product is**

ANSWER _____

Understand It with Pulse | Flag a mistake

18 **A farmer has 20 m of fencing to enclose a rectangular field against a straight river, so only three sides need fencing. The maximum area, in m², is**

ANSWER _____

Understand It with Pulse | Flag a mistake

19 **A farmer has 40 m of fencing to enclose a rectangular field against a straight river, so only three sides need fencing. The maximum area, in m², is**

ANSWER _____

Understand It with Pulse | Flag a mistake

20 **A rectangle has perimeter 160 m. Its maximum possible area, in m², is**

ANSWER _____

Understand It with Pulse | Flag a mistake

21 **Two numbers differ by 48. Their minimum possible product is**

ANSWER _____

Understand It with Pulse | Flag a mistake

22 **A square sheet of side 24 cm has squares cut from its corners to form an open box. The cut size that maximizes volume, in centimetres, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

23 **A rectangular garden has area 100 m² and is a square. Its perimeter, in metres, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

24 **Two numbers sum to 30. Their maximum possible product is**

ANSWER

Understand It with Pulse | Flag a mistake

25 **A sphere has radius 15 cm and its radius grows at 3 cm per second. Using pi equals 3.14, the rate of change of volume, in cm^3 per second, is**

ANSWER

Understand It with Pulse | Flag a mistake

ANSWER KEY

1.	450	**10.**	512	**19.**	200
2.	942	**11.**	900	**20.**	1600
3.	1152	**12.**	800	**21.**	-576
4.	3768	**13.**	128	**22.**	4
5.	2512	**14.**	625	**23.**	40
6.	6	**15.**	3	**24.**	225
7.	5652	**16.**	2	**25.**	8478
8.	100	**17.**	-36		
9.	1250	**18.**	50		

© 2026 Brett Robbins. All Rights Reserved.