

Solution

MATHEMATICS

MHT - CET - Mathematics

1. (a) 0

Explanation:

0

2.

(c) $\tan^{-1} \frac{b^2 - a^2}{2ab}$

Explanation:

$\tan^{-1} \frac{b^2 - a^2}{2ab}$

3. (a) $x^2 + y^2 = 36$

Explanation:

$x^2 + y^2 = 36$

4.

(b) $\frac{64}{5}$

Explanation:

$\frac{64}{5}$

5.

(b) $P(A \cap B) = \frac{1}{3}$

Explanation:

$P(A \cap B) = \frac{1}{3}$

6.

(c) $-\frac{1}{2}$

Explanation:

$-\frac{1}{2}$

7.

(c) 720

Explanation:

720

8.

(d) 336

Explanation:

336

9.

(c) f is not periodic

Explanation:

f is not periodic

10.

(d) $\log 4 \cdot \log 3$

Explanation:

$\log 4 \cdot \log 3$

11.

(b) $-\frac{7}{6}$

Explanation:

$-\frac{7}{6}$

12. (a) $(\sim p \wedge \sim q) \vee (q \vee \sim r)$

Explanation:

$(\sim p \wedge \sim q) \vee (q \vee \sim r)$

13.

(d) -1

Explanation:

-1

14. (a) k^2I

Explanation:

k^2I

15.

(b) $\frac{12}{13}$

Explanation:

$\frac{12}{13}$

16.

(b) $\tan^{-1} \frac{27}{11}$

Explanation:

$\tan^{-1} \frac{27}{11}$

17. (a) $\frac{2c}{a+b+c}$

Explanation:

$\frac{2c}{a+b+c}$

18. (a) $\frac{\pi}{4}$

Explanation:

$\frac{\pi}{4}$

19.

(b) $e^{\sin^2 y}$

Explanation:

$e^{\sin^2 y}$

20. (a) 0

Explanation:

0

21. (a) $\frac{1}{2}$

Explanation:

$\frac{1}{2}$

22.

(d) -2 and 5

Explanation:

-2 and 5

23. (a) (1, 0, 1)

Explanation:

(1, 0, 1)

24.

(b) $\vec{0}$

Explanation:

$\vec{0}$

25. (a) no value of λ

Explanation:

no value of λ

26. (a) -74

Explanation:

-74

27.

(d) $2(x-1)^2 + 7(x-1)(y-1) + 3(y-1)^2 = 0$

Explanation:

$2(x-1)^2 + 7(x-1)(y-1) + 3(y-1)^2 = 0$

28.

(d) $t = \frac{-1}{5}$

Explanation:

$t = \frac{-1}{5}$

29. (a) $\left(21, \frac{5}{3}, \frac{10}{3}\right)$

Explanation:

$\left(21, \frac{5}{3}, \frac{10}{3}\right)$

30. (a) $1000x + 1200y \leq 7600, 12x + 8y \leq 72, x \geq 0, y \geq 0$

Explanation:

$1000x + 1200y \leq 7600, 12x + 8y \leq 72, x \geq 0, y \geq 0$

31. (a) $-(\log_{10} x)^2$

Explanation:

$-(\log_{10} x)^2$

32.

(b) $\frac{1}{(1+x)^2(1-x)^{\frac{3}{2}}}$

Explanation:

$\frac{1}{(1+x)^2(1-x)^{\frac{3}{2}}}$

33.

(c) 1

Explanation:

1

34.

(c) $\sqrt{\frac{2}{3}}$

Explanation:

$$\sqrt{\frac{2}{3}}$$

35. (a) decreasing

Explanation:

decreasing

36. (a) $-\frac{1}{11}$

Explanation:

$$-\frac{1}{11}$$

37.

(d) $3x + 2y = 3\sqrt{2}$

Explanation:

$$3x + 2y = 3\sqrt{2}$$

38.

(c) $1 + \log x = t$

Explanation:

$$1 + \log x = t$$

39. (a) $\frac{x^4}{4} + \frac{1}{4}x \sin 2x + \frac{1}{8} \cos 2x + c$

Explanation:

$$\frac{x^4}{4} + \frac{1}{4}x \sin 2x + \frac{1}{8} \cos 2x + c$$

40.

(c) $\frac{1}{4} \log \left| \frac{x^2-1}{x^2+1} \right| + c$

Explanation:

$$\frac{1}{4} \log \left| \frac{x^2-1}{x^2+1} \right| + c$$

41.

(d) $e^x \left(\frac{x}{x+4} \right) + c$

Explanation:

$$e^x \left(\frac{x}{x+4} \right) + c$$

42.

(b) $\frac{3\pi a^2}{2}$

Explanation:

$$\frac{3\pi a^2}{2}$$

43.

(d) 6

Explanation:

6

44.

(b) $x + \operatorname{cosec}(x + y) = c$

Explanation:

$$x + \operatorname{cosec}(x + y) = c$$

45. (a) $\frac{4}{5}$

Explanation:

$$\frac{4}{5}$$

46.

(b) $\frac{1}{6}$

Explanation:

$$\frac{1}{6}$$

47.

(b) $a = \frac{1}{4}, b = \frac{1}{2}$

Explanation:

$$a = \frac{1}{4}, b = \frac{1}{2}$$

48.

(c) $\frac{1}{8}$

Explanation:

$$\frac{1}{8}$$

49.

(b) 1.26

Explanation:

$$1.26$$

50.

(c) $\frac{496}{729}$

Explanation:

$$\frac{496}{729}$$

SATISH SCIENCE
ACADEMY