Q1 / 100

What is lim(x→3) of $(x^2 - 9) / (x - 3)$?

```
lim  (x² - 9) / (x - 3)
x→3
```

A 3

B 6

C 9

D Undefined

Q2 / 100

What is lim(x→∞) of $(3x^2 + 2x) / (5x^2 - 1)$?

```
lim  (3x² + 2x) / (5x² - 1)
x→∞
```

A 0

B 3/5

C 2/5

D ∞

Q3 / 100

lim(x→0) sin(x)/x equals:

```
lim  sin(x) / x
x→0
```

A 0

B 1

C ∞

D Does not exist

Q4 / 100

For what value of k is f(x) = { kx+1 if x<2; x^2 if x≥2 } continuous at x = 2?

```
f(x) = { kx+1,   x < 2
         { x²,     x ≥ 2
```

A k = 3/2

B k = 1

C k = 2

D k = 3

Q5 / 100

lim(x→0) (1 − cos x) / x^2 equals:

```
lim  (1 - cos x) / x²
x→0
```

A 0

B 1/2

C 1

D 2

Q6 / 100

Which condition is NOT required for a function to be continuous at x = a?

A f(a) is defined

B f is differentiable at a

C lim(x→a) f(x) exists

D lim(x→a) f(x) = f(a)

Q7 / 100

lim(x→0^+) x · ln(x) equals:

```
lim  x · ln(x)
x→0⁺
```

A 0

B −1

C 1

D −∞

Q8 / 100

$\lim(x\to\infty)\ (1 + 3/x)^x$ equals:

```
lim  (1 + 3/x)^x
x→∞
```

A 1	B e
C e^3	D 3e

Q9 / 100

$\lim(x\to 0)\ (\tan x - x) / x^3$ equals:

```
lim  (tan x - x) / x³
x→0
```

A 0	B 1/3
C 1	D 1/2

Q10 / 100

If $\lim(x\to 2)\ f(x) = 5$ and $\lim(x\to 2)\ g(x) = 0$, which is true?

A lim f/g = 5/0, so undefined	B lim (f+g) = 5
C lim (f·g) = 5	D lim f/g = ∞ always

Q11 / 100

What is $d/dx\ [x^5]$?

```
d/dx [x⁵] = ?
```

A x^4	B $5x^4$
C $5x^5$	D $4x^4$

Q12 / 100

What is d/dx |sin(x)|?

A $-\cos x$

B $\cos x$

C $-\sin x$

D $\sec^2 x$

Q13 / 100

Using the product rule, d/dx $[x \cdot e^x]$ equals:

```
d/dx [x · eˣ]
```

A e^x

B $xe^x + e^x$

C xe^x

D x^2e^x

Q14 / 100

d/dx [ln(x)] equals:

```
d/dx [ln(x)] = ?
```

A x

B $1/x$

C $\ln(x)/x$

D $1/x^2$

Q15 / 100

Using the chain rule, d/dx $[\sin(x^2)]$ equals:

```
d/dx [sin(x²)]
```

A $\cos(x^2)$

B $2x \cdot \cos(x^2)$

C $2x \cdot \sin(x^2)$

D $\cos(2x)$

Q16 / 100

What is d/dx |tan(x)|?

A $\cot x$

B $\sec x$

C $\sec^2 x$

D $-\csc^2 x$

Q17 / 100

d/dx [$e^x \cdot \sin x$] using the product rule equals:

```
d/dx [eˣ · sin x]
```

A $e^x \cos x$

B $e^x \sin x + e^x \cos x$

C $e^x \cos x - e^x \sin x$

D $2e^x \sin x$

Q18 / 100

What is the derivative of arctan(x)?

```
d/dx [arctan(x)] = ?
```

A $1/\sqrt{(1-x^2)}$

B $1/(1+x^2)$

C $-1/(1+x^2)$

D $1/(x\sqrt{(x^2-1)})$

Q19 / 100

If $y = x^3 - 3x$, at which x-values is the tangent line horizontal?

```
y = x³ - 3x
```

A $x = 0$

B $x = \pm 1$

C $x = \pm\sqrt{3}$

D $x = 3$

Q20 / 100

Using implicit differentiation, find dy/dx for $x^2 + y^2 = 25$.

```
x² + y² = 25
```

- A $-x$
- B $-x/y$
- C x/y
- D y/x

Q21 / 100

d/dx $[x^x]$ equals:

```
d/dx [xˣ]
```

- A $x \cdot x^{x-1}$
- B $x^x(1+\ln x)$
- C $x^x \cdot \ln x$
- D x^x/x

Q22 / 100

The second derivative of $f(x) = x \cdot \sin(x)$ at $x = 0$ is:

```
f(x) = x · sin(x)
```

- A 0
- B 1
- C 2
- D −1

Q23 / 100

If $f'(x) > 0$ on an interval, the function is:

- A Concave up
- B Decreasing
- C Increasing
- D At a maximum

Q24 / 100

For $f(x) = x^3 - 6x^2 + 9x$, the local minimum value is:

```
f(x) = x³ - 6x² + 9x
```

A f(1)=4

B f(2)=2

C f(3)=0

D f(0)=0

Q25 / 100

The Mean Value Theorem guarantees that if f is continuous on [a,b] and differentiable on (a,b), there exists c such that:

```
f'(c) = (f(b) - f(a)) / (b - a)
```

A $f'(c) = 0$

B $f(c) = 0$

C $f'(c) = [f(b)-f(a)]/(b-a)$

D $f''(c) = 0$

Q26 / 100

If $f''(x) > 0$ on an interval, then f is:

A Increasing

B Decreasing

C Concave up

D Concave down

Q27 / 100

A particle moves so $x(t) = t^3 - 3t$. Its velocity at $t = 2$ is:

```
x(t) = t³ - 3t
```

A 2

B 6

C 9

D 12

Q28 / 100 ●●●

A box with no top has a square base. If surface area = 108 cm^2, what base length maximizes volume?

A $x = 3$

B $x = 6$

C $x = 9$

D $x = 4$

Q29 / 100 ●●

Related rates: A ladder 10 ft long leans against a wall. If the base slides away at 2 ft/s, how fast does the top slide down when the base is 6 ft from the wall?

```
x² + y² = 100
```

A 1 ft/s

B 3/2 ft/s

C 2 ft/s

D 4/3 ft/s

Q30 / 100 ●●

L'Hôpital's Rule applies to limits of the form:

A 0/1 or 1/0

B 0/0 or ∞/∞

C Only 0/0

D Any fraction

Q31 / 100 ●●

$f(x) = x^3$ has an inflection point at $x = 0$. Why?

```
f(x) = x³
```

A f(0)=0

B f'(0)=0

C f'' changes sign at x=0

D f is not differentiable at x=0

Q32 / 100

Which function has the fastest growth as $x \to \infty$?

A x^{100}

B ln(x)^1000

C e^x

D x^x

Q33 / 100

$\int x^4\, dx$ equals:

$$\int x^4 \, dx$$

A $4x^3 + C$

B $x^5 + C$

C $x^5/5 + C$

D $5x^5 + C$

Q34 / 100

$\int e^x\, dx$ equals:

$$\int e^x \, dx$$

A $xe^x + C$

B $e^x + C$

C $e^x/x + C$

D $e^x \cdot x + C$

Q35 / 100

$\int \cos(x)\, dx$ equals:

$$\int \cos(x) \, dx$$

A $\sin x + C$

B $-\sin x + C$

C $\cos x + C$

D $-\cos x + C$

Q36 / 100

$\int_0^2 (3x^2)\,dx$ equals:

$$\int_0^2 3x^2\,dx$$

A 4

B 6

C 8

D 12

Q37 / 100

$\int 1/(1+x^2)\,dx$ equals:

$$\int 1/(1+x^2)\,dx$$

A $\ln(1+x^2)+C$

B $\arctan(x)+C$

C $\arcsin(x)+C$

D $1/(2x)+C$

Q38 / 100

Using u-substitution: $\int 2x \cdot \sin(x^2)\,dx$ equals:

$$\int 2x \cdot \sin(x^2)\,dx$$

A $\cos(x^2)+C$

B $-\cos(x^2)+C$

C $\sin(x^2)+C$

D $2\cos(x^2)+C$

Q39 / 100

The Fundamental Theorem of Calculus Part 1 states that if $F(x) = \int_a^x f(t)dt$, then:

$$F(x) = \int_a^x f(t)\,dt$$

A $F'(x) = f(a)$

B $F'(x) = f(x)$

C $F'(x) = F(x)$

D $F'(x) = f(x)\cdot x$

Q40 / 100

$\int 1/x\ dx$ equals:

```
∫ 1/x dx
```

- A $1/x^2 + C$
- B $-1/x + C$
- C $\ln|x| + C$
- D $\ln(x^2) + C$

Q41 / 100

$\int \sec^2(x)\ dx$ equals:

```
∫ sec²(x) dx
```

- A $2\sec(x)\tan(x)+C$
- B $\sec(x)+C$
- C $\tan(x)+C$
- D $-\cot(x)+C$

Q42 / 100

$\int x \cdot e^x\ dx$ by integration by parts equals:

```
∫ x · eˣ dx
```

- A e^x+C
- B xe^x+C
- C xe^x-e^x+C
- D $x^2e^x/2+C$

Q43 / 100

$\int \sin^2(x)\ dx$ equals:

```
∫ sin²(x) dx
```

- A $-\sin(x)\cos(x)+C$
- B $x/2 - \sin(2x)/4 + C$
- C $\cos^2(x)+C$
- D $x - \sin(x)\cos(x)+C$

Q44 / 100

$\int_1$^e ln(x) dx equals:

$$\int_1^e \ln(x)\,dx$$

A 1

B e−1

C 1−e

D e

Q45 / 100

The area between $y=x^2$ and $y=x$ from $x=0$ to $x=1$ is:

$$A = \int_0^1 (x - x^2)\,dx$$

A 1/6

B 1/3

C 1/2

D 1/4

Q46 / 100

The volume of a solid of revolution about the x-axis using the disk method is:

$$V = \pi \int_a^b [f(x)]^2\,dx$$

A $2\pi\int f(x)dx$

B $\pi\int[f(x)]^2dx$

C $\int\pi[f(x)]dx$

D $2\pi\int x\cdot f(x)dx$

Q47 / 100

Using the shell method, the volume rotating $y=x^2$ ($0 \le x \le 2$) about the y-axis is:

$$V = 2\pi \int_0^2 x \cdot x^2 \, dx$$

- A 8π
- B $16\pi/5$
- C 4π
- D 16π

Q48 / 100

The arc length of $y = x^{(3/2)}$ from $x=0$ to $x=4$ is:

$$L = \int_0^4 \sqrt{(1 + [y']^2)} \, dx$$

- A 8
- B $(8/27)(10\sqrt{10}-1)$
- C $(8/27)(10^{(3/2)})$
- D $4\sqrt{5}$

Q49 / 100

The area of the region bounded by $y=4-x^2$ and the x-axis is:

$$y = 4 - x^2$$

- A 8
- B $16/3$
- C $32/3$
- D 16

Q50 / 100

Volume generated by rotating $y=\sqrt{x}$ ($0 \le x \le 4$) about the x-axis using disks:

```
V = π ∫₀⁴ (√x)² dx
```

A 4π	B 8π
C 16π	D 2π

Q51 / 100

The average value of $f(x)=x^2$ on $[0,3]$ is:

```
f_avg = (1/(b-a)) ∫ₐᵇ f(x) dx
```

A 3	B 9/3=3
C 9	D (1/3)·9=3

Q52 / 100

The area between $y=\sin(x)$ and $y=\cos(x)$ from $x=\pi/4$ to $x=5\pi/4$ is:

```
A = ∫_{π/4}^{5π/4} |sin x - cos x| dx
```

A √2	B 2√2
C √2/2	D 4

Q53 / 100

For a solid with square cross-sections perpendicular to the x-axis, where the base is bounded by $y=\sqrt{x}$ and $y=0$ on $[0,4]$, the volume is:

A 4	B 8
C 16	D 32

Q54 / 100

Washer method: volume rotating the region between $y=x$ and $y=x^2$ about the x-axis ($0 \le x \le 1$):

$$V = \pi \int_0^1 [(x)^2 - (x^2)^2]\, dx$$

- A $\pi/10$
- B $2\pi/15$
- C $\pi/5$
- D $\pi/3$

Q55 / 100

Solve: $dy/dx = 2x$, with $y(0) = 3$.

$$dy/dx = 2x, \quad y(0) = 3$$

- A $y = x^2$
- B $y = 2x+3$
- C $y = x^2+3$
- D $y = 2x^2+3$

Q56 / 100

Solve the separable equation: $dy/dx = y$, $y(0)=5$.

$$dy/dx = y$$

- A y=5x
- B y=e^x+4
- C y=5e^x
- D y=e^(5x)

Q57 / 100

The slope field for $dy/dx = x/y$ has curves that are:

$$dy/dx = x/y$$

- A Lines
- B Parabolas
- C Circles
- D Hyperbolas ($y^2-x^2=C$)

Q58 / 100

Euler's method with $h=0.5$ applied to $dy/dx=y$, $y(0)=1$, gives $y(0.5) \approx$

```
y_{n+1} = y_n + h·f(x_n, y_n)
```

A 1.0	B 1.5
C e^0.5≈1.65	D 2.0

Q59 / 100

Logistic growth: $dP/dt = kP(1-P/L)$. As $t\to\infty$, P approaches:

```
dP/dt = kP(1 - P/L)
```

A 0	B k
C L	D ∞

Q60 / 100

Which is a solution to $dy/dx = -2y$?

```
dy/dx = -2y
```

A y = e^(2x)	B y = e^(−2x)
C y = −2x+C	D y = 2/x

Q61 / 100

Separation of variables works when dy/dx can be written as:

A f(x+y)	B f(x)·g(y)
C f(x)/f(y)	D f(x)+g(y)

Q62 / 100

Newton's Law of Cooling: $T(t) = 20 + 80e^{(-kt)}$. If $T(0)=100°C$ and $T(10)=60°C$, find k.

```
T(t) = 20 + 80e^(-kt)
```

- A $k=\ln(2)/10$
- B $k=\ln(2)$
- C $k=1/10$
- D $k=\ln(4)/10$

Q63 / 100

For parametric equations $x=t^2$, $y=t^3$, dy/dx equals:

```
x = t², y = t³
```

- A $3t/2$
- B $t/2$
- C $3t^2/(2t)=3t/2$
- D $2t/3t^2=2/3t$

Q64 / 100

The arc length formula for parametric curves x(t), y(t) from t=a to t=b is:

```
L = ∫ₐᵇ √[(dx/dt)² + (dy/dt)²] dt
```

- A $\int|dy/dx|dt$
- B $\int\sqrt{[(dx/dt)^2+(dy/dt)^2]}dt$
- C $\int(dx/dt+dy/dt)dt$
- D $\int\sqrt{(x^2+y^2)}dt$

Q65 / 100

In polar coordinates, the area enclosed by $r=f(\theta)$ from $\theta=\alpha$ to $\theta=\beta$ is:

```
A = (1/2) ∫_α^β [f(θ)]² dθ
```

A $\int r\,d\theta$

B $(1/2)\int r\,d\theta$

C $(1/2)\int r^2\,d\theta$

D $\pi\int r^2\,d\theta$

Q66 / 100

Convert $r = 3$ to rectangular form:

```
r = 3
```

A $y = 3$

B $x^2+y^2=3$

C $x^2+y^2=9$

D $y=3x$

Q67 / 100

For $x=\cos t$, $y=\sin t$ $(0\le t\le 2\pi)$, the speed at $t=\pi/4$ is:

```
speed = √[(dx/dt)² + (dy/dt)²]
```

A 0

B 1

C $\sqrt{2}$

D 2

Q68 / 100

The area enclosed by the cardioid $r = 1+\cos\theta$ is:

```
A = (1/2) ∫₀^{2π} (1+cos θ)² dθ
```

A π

B 2π

C $3\pi/2$

D $2\pi + \pi$

Q69 / 100

The second derivative d^2y/dx^2 for parametric curves is:

```
d²y/dx² = d(dy/dx)/dt  ÷  dx/dt
```

A $(d^2y/dt^2)/(d^2x/dt^2)$

B $d(dy/dx)/dt \div (dx/dt)$

C $(dy/dt)^2/(dx/dt)^2$

D $dy/dt \div dx/dt$

Q70 / 100

At which θ does $r = \cos(2\theta)$ have a horizontal tangent? (Find one value.)

```
r = cos(2θ)
```

A $\theta=0$

B $\theta=\pi/4$

C $\theta=\pi/6$

D $\theta=\pi/2$

Q71 / 100

The geometric series $\Sigma(1/2)^n$ ($n=0$ to ∞) converges to:

```
Σ_{n=0}^∞ (1/2)ⁿ
```

A 1

B 2

C 1/2

D ∞

Q72 / 100

The p-series $\Sigma\ 1/n^p$ converges when:

```
Σ_{n=1}^∞ 1/nᵖ
```

A $p > 0$

B $p \geq 1$

C $p > 1$

D $p < 1$

Q73 / 100

Which test determines convergence of $\Sigma\ (-1)^n/n$?

```
Σ_{n=1}^∞ (-1)ⁿ /n
```

A Ratio Test

B p-series

C Alternating Series Test

D Integral Test

Q74 / 100

For the series $\Sigma\ a_n$, the Ratio Test says it converges absolutely if:

```
L = lim |a_{n+1}/a_n|
```

A $L = 1$

B $L > 1$

C $L < 1$

D $L = 0$

Q75 / 100

The Taylor series for e^x centered at 0 is:

```
eˣ = Σ_{n=0}^∞ xⁿ /n!
```

A Σx^n

B $\Sigma x^n/n$

C $\Sigma x^n/n!$

D Σnx^n

Q76 / 100

The Maclaurin series for sin(x) is:

```
sin(x) = Σ_{n=0}^∞  (-1)ⁿ  x^(2n+1) / (2n+1)!
```

A $\Sigma x^n/n!$

B $\Sigma (-1)^n x^{(2n)}/(2n)!$

C $\Sigma (-1)^n x^{(2n+1)}/(2n+1)!$

D $\Sigma x^n/(2n)!$

Q77 / 100

The interval of convergence of $\Sigma x^n/n$ (n=1 to ∞) is:

```
Σ_{n=1}^∞ xⁿ /n
```

A (−1,1)

B [−1,1)

C (−1,1]

D [−1,1]

Q78 / 100

Using the series for e^x, approximate $e^{0.1}$ to 3 terms:

```
eˣ ≈ 1 + x + x²/2
```

A 1.1

B 1.105

C 1.1052

D 1.11

Q79 / 100

The power series Σnx^n (n=0 to ∞) converges for:

```
Σ_{n=0}^∞ n xⁿ
```

A $|x|<1$

B All x

C $x>0$

D $|x|\leq 1$

Q80 / 100

If Σa_n converges and all $a_n>0$, which is definitely true?

A Σa_n^2 converges

B $a_n \to 0$ as $n\to\infty$

C $\Sigma 1/a_n$ converges

D a_n is decreasing

Q81 / 100

The radius of convergence of $\Sigma\ x^n/3^n$ is:

```
Σ_{n=0}^∞ (x/3)ⁿ
```

A 1

B 1/3

C 3

D ∞

Q82 / 100

The Maclaurin series for $1/(1-x)$ is:

```
1/(1-x) = Σ_{n=0}^∞ xⁿ ,  |x|<1
```

A $\Sigma x^n/n!$

B Σx^n

C $\Sigma(-1)^n x^n$

D $\Sigma n x^n$

Q83 / 100

The error bound for alternating series $|S - S_n|$ is at most:

A $|a_n|$

B $|a_{n+1}|$

C $|a_1|$

D 1/n

Q84 / 100

The Taylor series for ln(1+x) centered at 0 is:

```
ln(1+x) = Σ_{n=1}^∞ (-1)^{n+1} xⁿ /n
```

A $\Sigma x^n/n!$

B $\Sigma(-1)^{(n+1)}x^n/n$

C $\Sigma x^n/(n+1)$

D $\Sigma(-1)^n x^n/n!$

Q85 / 100

$\int x/(x^2+1)\,dx$ equals:

```
∫ x/(x²+1) dx
```

A arctan(x)+C

B $(1/2)\ln(x^2+1)+C$

C $\ln(x^2+1)+C$

D $x^2/2\cdot\ln(x)+C$

Q86 / 100

$\int 1/(x^2-1)\,dx$ using partial fractions equals:

```
1/(x²-1) = 1/[(x-1)(x+1)]
```

A $\ln|x+1|-\ln|x-1|+C$

B $(1/2)\ln|x-1|-(1/2)\ln|x+1|+C$

C $(1/2)\ln|(x-1)/(x+1)|+C$

D arctan(x)+C

Q87 / 100

∫ $\sin^3(x)\cos(x)$ dx equals:

```
∫ sin³(x)cos(x) dx
```

A $\sin^4 x+C$

B $\sin^4 x/4+C$

C $-\cos^4 x/4+C$

D $3\sin^2 x/2+C$

Q88 / 100

∫ $\sqrt{(1-x^2)}$ dx can be evaluated using:

```
∫ √(1-x²) dx
```

A u-substitution $u=1-x^2$

B Partial fractions

C Trig substitution $x=\sin\theta$

D Integration by parts only

Q89 / 100

∫ $xe^{(x^2)}$ dx equals:

```
∫ x e^(x²) dx
```

A $e^{(x^2)}+C$

B $(1/2)e^{(x^2)}+C$

C $x^2e^{(x^2)}+C$

D $2xe^{(x^2)}+C$

Q90 / 100

∫ $\ln(x)$ dx using integration by parts equals:

```
∫ ln(x) dx
```

A $x/\ln(x)+C$

B $\ln(x)/x+C$

C $x\cdot\ln(x)-x+C$

D $x\cdot\ln(x)+C$

Q91 / 100

$\int_1^\infty 1/x^2$ dx equals:

> $\int_1^\infty x^{-2}$ dx

A ∞

B 2

C 1

D 1/2

Q92 / 100

$\int_1^\infty 1/x$ dx is:

> $\int_1^\infty 1/x$ dx

A 1

B ln(2)

C Convergent

D Divergent

Q93 / 100

$\int_0^\infty e^{(-x)}$ dx equals:

> $\int_0^\infty e^{(-x)}$ dx

A 0

B 1

C e

D ∞

Q94 / 100

$\int_0^1 1/\sqrt{x}\, dx$ is:

```
∫₀¹ x^(-1/2) dx
```

A Divergent

B 1

C 2

D $\pi/2$

Q95 / 100

A particle moves with position $r(t) = \langle t^2, 2t \rangle$. Its speed at $t=1$ is:

```
speed = |v(t)| = √[(x')² + (y')²]
```

A 2

B $\sqrt{2}$

C $2\sqrt{2}$

D $\sqrt{8}=2\sqrt{2}$

Q96 / 100

Total distance traveled by a particle with $v(t) = t - 2$ from $t=0$ to $t=4$ is:

```
distance = ∫₀⁴ |v(t)| dt
```

A 0

B 2

C 4

D 8

Q97 / 100

If position is $s(t)=t^3-6t^2+9t$, when is the particle at rest?

```
v(t) = s'(t) = 0
```

A t=0 only	B t=1 and t=3
C t=2	D t=3 only

Q98 / 100

Displacement from t=0 to t=4 for $v(t) = t^2-2t$ is:

```
displacement = ∫₀⁴ v(t) dt
```

A 8/3	B 16/3
C 8	D 16

Q99 / 100

Using the series for cos x, evaluate $\lim(x\to 0)\ (\cos x - 1 + x^2/2) / x^4$:

```
cos x = 1 - x²/2! + x⁴ /4! - ...
```

A 0	B 1/12
C 1/24	D 1/6

Q100 / 100

$\int_{-1}^{1} x^3 \cdot \cos(x^2)\, dx$ equals:

```
∫₋₁ ¹ x³·cos(x²) dx
```

A 2	B π/2
C 0	D 1/2

Answer Key

Q1. **B**	Q2. **B**	Q3. **B**	Q4. **A**	Q5. **B**
Q6. **B**	Q7. **A**	Q8. **C**	Q9. **B**	Q10. **B**
Q11. **B**	Q12. **B**	Q13. **B**	Q14. **B**	Q15. **B**
Q16. **C**	Q17. **B**	Q18. **B**	Q19. **B**	Q20. **B**
Q21. **B**	Q22. **C**	Q23. **C**	Q24. **C**	Q25. **C**
Q26. **C**	Q27. **C**	Q28. **B**	Q29. **B**	Q30. **B**
Q31. **C**	Q32. **D**	Q33. **C**	Q34. **B**	Q35. **A**
Q36. **C**	Q37. **B**	Q38. **B**	Q39. **B**	Q40. **C**
Q41. **C**	Q42. **C**	Q43. **B**	Q44. **A**	Q45. **A**
Q46. **B**	Q47. **A**	Q48. **B**	Q49. **C**	Q50. **B**
Q51. **A**	Q52. **B**	Q53. **B**	Q54. **B**	Q55. **C**
Q56. **C**	Q57. **D**	Q58. **B**	Q59. **C**	Q60. **B**
Q61. **B**	Q62. **A**	Q63. **A**	Q64. **B**	Q65. **C**
Q66. **C**	Q67. **B**	Q68. **C**	Q69. **B**	Q70. **C**
Q71. **B**	Q72. **C**	Q73. **C**	Q74. **C**	Q75. **C**
Q76. **C**	Q77. **B**	Q78. **B**	Q79. **A**	Q80. **B**
Q81. **C**	Q82. **B**	Q83. **B**	Q84. **B**	Q85. **B**
Q86. **C**	Q87. **B**	Q88. **C**	Q89. **B**	Q90. **C**
Q91. **C**	Q92. **D**	Q93. **B**	Q94. **C**	Q95. **C**
Q96. **C**	Q97. **B**	Q98. **B**	Q99. **C**	Q100. **C**