

Of course! Here's a **carefully crafted set** of 20 questions on auto, decltype, and their type deduction behavior, each with **4 choices** and **answers at the end**.

20 Questions: auto and decltype Deductions (C++)

Q1.

```
int a = 10;
```

```
auto x = a;
```

What is the type of x?

- (A) int&
 - (B) const int
 - (C) int
 - (D) const int&
-

Q2.

```
const int a = 5;
```

```
auto x = a;
```

Type of x?

- (A) int
 - (B) const int
 - (C) int&
 - (D) const int&
-

Q3.

```
int a = 7;
```

```
auto& y = a;
```

Type of y?

- (A) int
 - (B) int&
 - (C) const int&
 - (D) int&&
-

Q4.

```
int a = 5;
```

```
const int& r = a;
```

```
auto x = r;
```

Type of x?
(A) int
(B) const int
(C) int&
(D) const int&

Q5.

```
int a = 10;  
  
decltype(a) x;
```

Type of x?
(A) int&
(B) int
(C) const int
(D) int&&

Q6.

```
int a = 10;  
  
decltype((a)) x = a;
```

Type of x?
(A) int
(B) int&
(C) const int
(D) int&&

Q7.

```
int&& foo();  
  
auto x = foo();
```

Type of x?
(A) int&
(B) int&&
(C) int
(D) const int&

Q8.

```
int&& foo();  
  
auto&& x = foo();
```

Type of x?
(A) int&
(B) int&&
(C) int
(D) const int&

Q9.

```
const int x = 10;  
  
decltype(auto) y = (x);
```

Type of y?
(A) int
(B) int&
(C) const int&
(D) const int

Q10.

```
int a = 2;  
  
auto&& r = a;
```

Type of r?
(A) int&
(B) int&&
(C) int
(D) const int&

Q11.

```
const int a = 4;  
  
decltype(a) x = a;
```

Type of x?
(A) const int
(B) int
(C) int&
(D) const int&

Q12.

```
const int a = 4;  
  
decltype((a)) x = a;
```

Type of x?

- (A) const int
 - (B) const int&
 - (C) int
 - (D) int&
-

Q13.

int x = 0;

auto y = (x);

Type of y?

- (A) int
 - (B) int&
 - (C) int&&
 - (D) const int
-

Q14.

int x = 0;

decltype(auto) y = (x);

Type of y?

- (A) int
 - (B) int&
 - (C) int&&
 - (D) const int
-

Q15.

const int x = 5;

auto& y = x;

Type of y?

- (A) int&
 - (B) const int&
 - (C) int
 - (D) const int
-

Q16.

int a = 10;

auto* p = &a;

Type of p?
(A) int
(B) int*
(C) int&
(D) const int*

Q17.

const int a = 10;

auto* p = &a;

Type of p?
(A) int*
(B) const int*
(C) const int&
(D) int&

Q18.

auto func() -> int&;

auto x = func();

Type of x?
(A) int&
(B) int
(C) const int&
(D) int&&

Q19.

auto func() -> const int&;

decltype(auto) x = func();

Type of x?
(A) const int&
(B) int
(C) const int
(D) int&

Q20.

int x = 5;

decltype((x)) y = x;

Type of y?
(A) int
(B) int&
(C) const int
(D) const int&

Answer Key

Question Correct Answer

Q1	C
Q2	A
Q3	B
Q4	A
Q5	B
Q6	B
Q7	C
Q8	B
Q9	C
Q10	A
Q11	A
Q12	B
Q13	A
Q14	B
Q15	B
Q16	B
Q17	B
Q18	A
Q19	A
Q20	B
