

C++ Integer Overflow Exam

Questions

Question 1:

```
1 #include <iostream>
2 int main() {
3     int x = 2147483647; // Maximum value for 32-bit int
4     int y = x + 1;
5     std::cout << y;
6 }
```

Question 2:

```
1 #include <iostream>
2 int main() {
3     unsigned int x = 4294967295; // Maximum value for 32-bit
4     unsigned int y = x + 1;
5     std::cout << y;
6 }
```

Question 3:

```
1 #include <iostream>
2 int main() {
3     short x = 32767; // Maximum value for 16-bit short
4     short y = x + 1;
5     std::cout << y;
6 }
```

Question 4:

```
1 #include <iostream>
2 int main() {
3     unsigned short x = 65535; // Maximum value for 16-bit unsigned
4     unsigned short y = x + 1;
5     std::cout << y;
6 }
```

Question 5:

```
1 #include <iostream>
2 int main() {
3     int x = 2147483647;
4     int y = x * 2;
```

```
5     std::cout << y;
6 }
```

Question 6:

```
1 #include <iostream>
2 int main() {
3     unsigned int x = 4294967295;
4     unsigned int y = x * 2;
5     std::cout << y;
6 }
```

Question 7:

```
1 #include <iostream>
2 int main() {
3     short x = 32767;
4     short y = x * 2;
5     std::cout << y;
6 }
```

Question 8:

```
1 #include <iostream>
2 int main() {
3     unsigned short x = 65535;
4     unsigned short y = x * 2;
5     std::cout << y;
6 }
```

Question 9:

```
1 #include <iostream>
2 int main() {
3     int x = -2147483648; // Minimum value for 32-bit int
4     int y = x - 1;
5     std::cout << y;
6 }
```

Question 10:

```
1 #include <iostream>
2 int main() {
3     unsigned int x = 0;
4     unsigned int y = x - 1;
5     std::cout << y;
6 }
```

Question 11:

```
1 #include <iostream>
2 int main() {
3     short x = -32768; // Minimum value for 16-bit short
4     short y = x - 1;
5     std::cout << y;
6 }
```

Question 12:

```

1 #include <iostream>
2 int main() {
3     unsigned short x = 0;
4     unsigned short y = x - 1;
5     std::cout << y;
6 }

```

Question 13:

```

1 #include <iostream>
2 #include <cstdint>
3 int main() {
4     uint32_t x = 4294967295;
5     uint32_t y = x + 1;
6     std::cout << y;
7 }

```

Question 14:

```

1 #include <iostream>
2 #include <cstdint>
3 int main() {
4     int32_t x = 2147483647;
5     int32_t y = x + 1;
6     std::cout << y;
7 }

```

Question 15:

```

1 #include <iostream>
2 int main() {
3     int x = 2147483647;
4     unsigned int y = x + 1;
5     std::cout << y;
6 }

```

Question 16:

```

1 #include <iostream>
2 int main() {
3     unsigned int x = 4294967295;
4     int y = x + 1;
5     std::cout << y;
6 }

```

Question 17:

```

1 #include <iostream>
2 int main() {
3     short x = 32767;
4     unsigned short y = x + 1;
5     std::cout << y;
6 }

```

Question 18:

```
1 #include <iostream>
2 int main() {
3     unsigned short x = 65535;
4     short y = x + 1;
5     std::cout << y;
6 }
```

Question 19:

```
1 #include <iostream>
2 int main() {
3     int x = 2147483647;
4     long long y = x + 1;
5     std::cout << y;
6 }
```

Question 20:

```
1 #include <iostream>
2 int main() {
3     unsigned int x = 4294967295;
4     long long y = x + 1;
5     std::cout << y;
6 }
```