Questions 5 and 6: Esophageal cancer and alcohol/tobacco use, part 2

The following four parts look at probabilities related to alcohol and tobacco consumption among the cases.

Question 5a

1.0/1.0 point (graded)

For cases, what is the probability of being in the highest alcohol group?

0.225 ✔ **Answer:** 0.225

0.225

Explanation

The probability can be calculated using the following code:

```
high_alc_cases <- esoph %>%
  filter(alcgp == "120+") %>%
  pull(ncases) %>%
  sum()

p_case_high_alc <- high_alc_cases/all_cases
p_case_high_alc
```

Submit You have used 1 of 10 attempts

Answers are displayed within the problem

Question 5b

1.0/1.0 point (graded)

For cases, what is the probability of being in the highest tobacco group?

0.155 ✔ **Answer:** 0.155

0.155

Explanation
The probability can be calculated using the following code:

```
high_tob_cases <- esoph %>%
  filter(tobgp == "30+") %>%
  pull(ncases) %>%
  sum()

p_case_high_tob <- high_tob_cases/all_cases
p_case_high_tob
```

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Question 5c

1.0/1.0 point (graded)
For cases, what is the probability of being in the highest alcohol group **and** the highest tobacco group?

0.05 ✔ **Answer:** 0.05

0.05

Explanation
The probability can be calculated using the following code:

```
high_alc_tob_cases <- esoph %>%
  filter(alcgp == "120+" & tobgp == "30+") %>%
  pull(ncases) %>%
  sum()

p_case_high_alc_tob <- high_alc_tob_cases/all_cases
p_case_high_alc_tob
```

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Question 5d

1.0/1.0 point (graded)
For cases, what is the probability of being in the highest alcohol group **or** the highest tobacco group?

0.33 ✔ **Answer:** 0.33

0.33

Explanation
The probability can be calculated using the following code:

```
p_case_either_highest <- p_case_high_alc + p_case_high_tob - p_case_high_alc_tob
p_case_either_highest
```

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Answers are displayed within the problem

The following six parts look at probabilities related to alcohol and tobacco consumption among the controls and also compare the cases and the controls.

Question 6a

1.0/1.0 point (graded)
For controls, what is the probability of being in the highest alcohol group?

0.068 ✔ **Answer:** 0.0687

0.068

Explanation
The probability can be calculated using the following code:

```
high_alc_controls <- esoph %>%
  filter(alcgp == "120+") %>%
  pull(ncontrols) %>%
  sum()

p_control_high_alc <- high_alc_controls/all_controls
p_control_high_alc
```

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Answers are displayed within the problem

Question 6b

0.0/1.0 point (graded)

How many times more likely are cases than controls to be in the highest alcohol group?

0.671 ✖ **Answer:** 3.27

0.671

Explanation

This calculated using the following code:

```
p_case_high_alc/p_control_high_alc
```

Submit You have used 10 of 10 attempts

Answers are displayed within the problem

Question 6c

1.0/1.0 point (graded)

For controls, what is the probability of being in the highest tobacco group?

0.084 ✔ **Answer:** 0.0841

0.084

Explanation

The probability can be calculated using the following code:

```
high_tob_controls <- esoph %>%
  filter(tobgp == "30+") %>%
  pull(ncontrols) %>%
  sum()

p_control_high_tob <- high_tob_controls/all_controls
p_control_high_tob
```

Submit You have used 1 of 10 attempts

Answers are displayed within the problem

Question 6d

1.0/1.0 point (graded)

For controls, what is the probability of being in the highest alcohol group **and** the highest tobacco group?

0.013 ✔ **Answer:** 0.0133

0.013

Explanation

The probability can be calculated using the following code:

```
high_alc_tob_controls <- esoph %>%
  filter(alcgp == "120+" & tobgp == "30+") %>%
  pull(ncontrols) %>%
  sum()

p_control_high_alc_tob <- high_alc_tob_controls/all_controls
p_control_high_alc_tob
```

Submit You have used 1 of 10 attempts

Answers are displayed within the problem

Question 6e

1.0/1.0 point (graded)

For controls, what is the probability of being in the highest alcohol group **or** the highest tobacco group?

0.139 ✔ **Answer:** 0.139

0.139

Explanation

The probability can be calculated using the following code:

```
p_control_either_highest <- p_control_high_alc + p_control_high_tob - p_control_high_alc_tob
p_control_either_highest
```

Submit You have used 2 of 10 attempts

Answers are displayed within the problem

Question 6f

1.0/1.0 point (graded)

How many times more likely are cases than controls to be in the highest alcohol group **or** the highest tobacco group?

2.37 ✔ **Answer:** 2.37

2.37

Explanation

This calculated using the following code:

```
p_case_either_highest/p_control_either_highest
```

Submit You have used 2 of 10 attempts

Answers are displayed within the problem