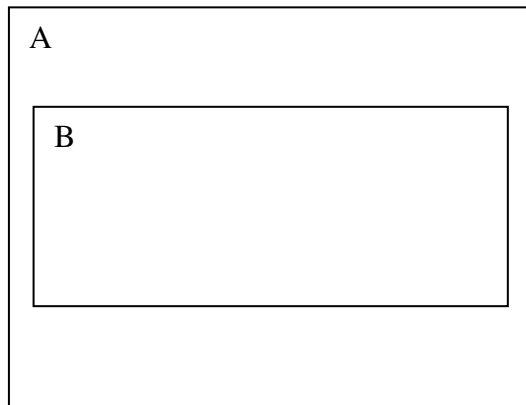




4. (4 points) Write constraint equations for the following layout, where rectangle B is half the height of rectangle A, centered in rectangle A, and has a 5-pixel margin around it.



You may use left, right, top, bottom, width, height, all of which are screen coordinates in pixels.

5. (4 points) Explain what selectivity means for visual variables, and give an example of a variable that is **not** selective.



10. (4 points) Explain how Gestalt principles of grouping help you understand the structure of this quiz page.
11. (3 points) Explain why strongly saturated colors are rarely used in good user interface designs.
12. (3 points) Which of the following problems are least likely to be found by user testing a horizontal computer prototype?
- A. An important toolbar button is too small and too far away.
  - B. The system's response time is too slow.
  - C. An icon is incomprehensible.
  - D. There isn't enough room on the screen for all the information.

Choose one: \_\_\_\_\_

13. (4 points) Give one advantage of a form builder (or GUI builder) for creating computer prototypes, and one advantage of storyboarding.

14. (4 points) Give one usability advantage of reusable widgets, and one usability disadvantage.

15. (3 points) Define toolkit layering, and give one example of a layered toolkit.

16. (3 points) Explain the difference between Swing and AWT in their approach to widgets.

17. (4 points) Give two important differences between user testing and heuristic evaluation.

18. (4 points) Define a critical incident.

The comments below come from a heuristic evaluation performed on a web site. Name a heuristic that justifies each of the following usability problems found during the evaluation.

19. (3 points) “The form’s Clear button is too prominent.”

20. (3 points) “Hyperlinks are not underlined.”

21. (3 points) “Documents in the library are listed by an obscure product code, instead of by title.”

22. (3 points) “The form asks for the user’s personal information every time the user visits the site.”

In the following questions, you are designing a controlled experiment concerning menus.

23. (3 points) The experiment will compare conventional rectangular popup menus with radial (pie-shaped) menus. This is:

- A. independent variable
- B. dependent variable
- C. uncontrolled variable

Choose one: \_\_\_\_\_

24. (3 points) The experiment will measure time to make a choice from the menu. This is:

- A. independent variable
- B. dependent variable
- C. uncontrolled variable

Choose one: \_\_\_\_\_

25. (4 points) The experiment will use a within-subjects design. What does this mean?

26. (3 points) The experiment will only use users who have played a game that uses radial menus (such as the Sims). This decision threatens:

- A. reliability
- B. internal validity
- C. external validity

Choose one: \_\_\_\_\_

27. (3 points) Louis Reasoner runs an enormous experiment with 20 different independent variables. He's thrilled to find that exactly one of the independent variables has a statistically significant effect ( $p=0.05$ ) on the dependent variable. Should he publish his result? Why or why not?

28. (4 points) Explain the differences between formative evaluation and a controlled experiment.

29. (3 points) List 3 things you should say, for ethical reasons, when briefing a user for a user test.

**END OF QUIZ**