Answers to Algebra 2 L1.3c Lines of Fit and Best Fit #13-24, 27, 29, 32

13. yes; *Sample answer:* $y = 4.25x + 1.75$; $y = 65.5$; After 15 minutes, you have burned 65.5 calories.

14. yes; *Sample answer:* $y = 0.55x - 2.25$; $y = 6$; After 15 months, the hair will be 6 inches in length.

15. yes; *Sample answer:* $y = -4.6x + 96$; $y = 27$; After 15 hours, the battery will have 27% of life remaining.

16. no

17. $y = 380.03x + 11{,}290$; $16,990.45; The annual tuition increases about $380 each year and the cost of tuition in 2005 is about $11,290.

18. *Sample answer:* $y = -6.2x + 549$; no; The value 85 is not close to the values used to create the line of fit.

19. $y = 0.42x + 1.44$; $r = 0.61$; weak positive correlation

20. $y = 0.88x + 1.69$; $r = 0.88$; strong positive correlation

21. $y = -0.45x + 4.26$; $r = -0.67$; weak negative correlation

22. $y = -1.04x + 5.68$; $r = -0.93$; strong negative correlation

23. $y = 0.61x + 0.10$; $r = 0.95$; strong positive correlation

24. $y = -0.48x + 4.08$; $r = -0.91$; strong negative correlation

27. no; Because r is close to 0, the points do not lie close to the line.

29. It is negative; As x increases, y increases, so z decreases.

32. a. yes; If a country has a high number of personal computers per capita, it indicates wealth and a high quality of life which would also indicate that the country would have a health care system and, therefore, a higher life expectancy.

    b. no; The high life expectancy is not caused by the computers. Both are benefits of the wealth of a country. This is an example of how correlation does not imply causation.