

1. Actual 20, predicted 18. Residual?

20 - 18

Answer: 2

2. Actual 15, predicted 19. Residual?

15 - 19

Answer: -4

3. A residual of 0 means what?

Actual = predicted

Answer: prediction was exact

4. Positive residual: the model under- or over-predicted?

Actual above predicted

Answer: under-predicted

5. Line $y = 2x + 1$. At $x = 3$ the actual is 8. Find the residual.

Predicted 7; 8 - 7

Answer: 1

6. Line $y = 2x + 1$. At $x = 5$ actual is 9. Residual?

Predicted 11; 9 - 11

Answer: -2

7. A residual plot shows points scattered randomly. Good fit or bad?

No pattern

Answer: good linear fit

8. A residual plot shows a clear U-shape. What does that mean?

Pattern = wrong model

Answer: linear model is a poor fit

9. Line $y = 3x + 2$. Data (1,6),(2,7): find both residuals and say if the fit looks good. ★ challenge

Pred 5,8; res 1, -1

Small, opposite signs

Answer: residuals +1, -1 - decent fit

10. For $y = x + 4$, data (2,7) gives residual +1 and (5,8) gives residual -1. What pattern, and does the model fit?

No systematic pattern, small

Answer: random & small - fits well