Math 1 Exam Review 2

1. $(2m+4)(m-5)$

2. $(p+5)(p^2-2p+3)$

3. $(x-3)^2$

4. $\begin{array}{r} -9y^2 \\ 3y^4 \end{array}$

5. $\begin{array}{r} -3q^3r \\ 4qr^4 \end{array}$

6. $(3a^3)(6a^4)$

7. $(x - 4)(x + 5)$

8. $(x^2 + 3x - 4) + (2x^2 - 6x + 12)$

Use for problems 6-8:
$\{(4,8), (6,3), (2,0), (0,4), (3,1), (1,4)\}$

9. Is the relation a function?

10. What is the domain(x values) of the relation?

11. What is the range(y- values) of the relation?

The formula $^oC = \frac{5}{9}(^oF - 32)$ is used to convert degrees Fahrenheit, ^oF, to degrees Celsius, ^oC.

12. If the temperature in Chicago is currently $10\,^oC$, what does the thermometer read in degrees Fahrenheit?

13. If the temperature in Salisbury is currently $54\,^oF$, what does the thermometer read in degrees Celsius?

A Nolan Ryan autographed baseball is purchased in 2010 for $300 and is expected to appreciate $40 each year.

14. Write an equation that represents the value, *V*, of the ball at the end of *x* years.

15. Determine the expected value of the ball in 2022.

A fiber-optic technician charges a flat fee of $25 and $12 an hour.

16. Write an equation to model the situation using *A* for total amount charged for *h* hours of work.

17. The technician worked $1\frac{1}{2}$ hours. What is the total amount charged by the technician?

18. The technician charged $52 for a job in an office. How long did the technician work in the office?

Homer wants to Bart to take karate lessons. Sidekick Dojo charges a $20 registration fee and $35 each month. Karate-R-Us charges $40 monthly and $5 to start.

19. Write an equation to model Sidekick Dojo using *T* for total paid and *m* for months.

20. Write an equation to model Karate-R-Us using *T* for total paid and *m* for months.

21. After how many months of karate would the totals cost the exact same?

The height, *h(s)*, in feet of a water balloon that is thrown is given by the formula $h(s) = 6.5 + 20s - 16s^2$, where *s* is the time in seconds.

22. What is the height of the object at 1 second?

23. What is the height of the object at 0.5 second?

24. What is the difference in the height of the object at 0.5 second and the height at 1 second?

<u>Evaluate when x = 2 and y = -3</u>

25. $2x^2 + 3y^2$

26. $-4xy - 5xy$

27. $-3x^3y + 2xy^2$

Solve:

28. $9(x + 3) = 4x + 37$

29. $13x + 9 = 12x + 12$

30. $2(x - 2) = 4x + 8$

31. Find the five-number summary of the data:
22, 13, 7, 43, 15, 25, 2, 70, 33, 20, 12, 26, 18

32. Sketch a box plot.

33. Is the data skewed right, skewed left, or approximately normal?

34. What is the mean of the data:
12, 18, 30, 63, 42, 21, 81, 17, 25, 33

35. What is the range of the data:
54, 62, 33, 21, 46, 20, 19, 39, 51, 11, 48, 60

36. What is the IQR of the data:
31, 27, 17, 71, 43, 34, 52, 50, 14, 18, 35, 42