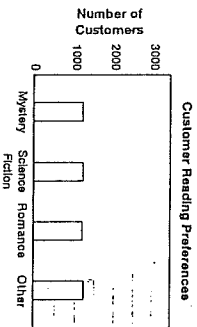


Cumulative Test **8A**

1. (69) Find the prime factorization of 130.

2. (inv. 3) A school conducts a survey about favorite sports. The coach asks members of the basketball team to name their favorite sport. Give a reason why the sampling method may be biased.

3. (27) A bookstore conducted a survey of the reading preferences of its customers. The bar graph shows the results. Explain why the graph may be misleading.



4. (37) Find the product $(3.2 \times 10^3)(1.1 \times 10^2)$. Write the answer in scientific notation.

Simplify problems 5–8.

5. (40) $(6x^2y^3)^2$

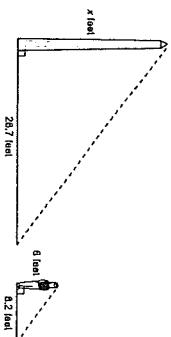
6. (99) $\frac{a^{-1}}{x} \left(\frac{bc}{y^2 - 5} + 2a^{-3}z^2 \right)$

7. (10) $2a^2 + 4a^2 + 3ab^2 - 3a^2 - 2ab^2$

8. (11) $(-2)^3$

9. (29) The formula $F = \frac{9}{5}C + 32$ expresses Fahrenheit temperature in terms of Celsius temperature. Find the Celsius temperature when the Fahrenheit temperature is 59° .

10. (68) A monument casts a shadow 28.7 feet long. A man who is 6 feet tall casts a shadow 8.2 feet long. The triangle drawn with the monument and its shadow is similar to the triangle drawn with the man and his shadow. How tall is the monument?



Cumulative Test **8A**
continued

11. (39) A bag contains 6 red marbles and 4 blue marbles. Find the probability of drawing a red marble, keeping it, and drawing another red marble. Write the probability as a fraction in simplest form.

12. (8) A road sign in Europe shows the distance between two cities as 850 kilometers. If 1 kilometer equals 0.62 mile, what is the distance between the two cities in miles?

13. (24) Determine whether the sequence below is an arithmetic sequence.
6, 13, 20, 27, ...

If yes, find the common difference and the next two terms.

14. (6) Find the difference $(-2z) - (-6.7)$.

Solve problems 15–17.

15. (29) $16 - 4x = -2(2x - 8)$

16. (20) $-6y - 4 + 3y - 8 = 24$

17. (24) $-0.3c + 0.5 = 2.6$

18. (10) Order the numbers from least to greatest.

$\frac{1}{8}, -\frac{3}{4}, -0.5, -2$

19. (9) Evaluate $6c - 4d + 3cd$ for $c = 5$ and $d = 3$.

20. (17) Jason scores 3 points for each question answered correctly on an exam. Write an algebraic expression for the total points he will score if he answers n questions correctly.

<p>1. $\frac{13}{2} \sqrt{130}$ $\frac{2 \sqrt{10}}{5}$ $130 = 2 \cdot 5 \cdot 13$</p>	<p>6. $0^{-1} \left(\frac{bc}{4a^2 - 5x^2} + 20^{-3} z^{-2} \right)$ $\frac{1}{z} \left(\frac{bca^5 z^2}{4} + \frac{2}{a^3 z^2} \right)$ $\frac{bc a^5 z^2}{4x^2 y} + \frac{2}{a^3 z^2 a^2 x} = \frac{0^4 bc z^2}{4x^2 y} + \frac{2}{a^5 z^2}$ $a \neq 0, y \neq 0, z \neq 0$</p>
<p>2. The sampling is biased because he asked the basketball team. They would probably say that basketball is their favorite sport.</p>	<p>7. $2a^2 + 4a^2 + 3ab^2 - 3a^2 - 2ab^2$ $+ 2a^2 + 4a^2 - 3a^2 + 3ab^2 - 2ab^2$ $3a^2 + 2ab^2$</p>
<p>3. The graph may be misleading because the increments on the y-axis are large making the data values appear closer than the actuality are.</p>	<p>8. $(-2)^3$ $-2 \cdot -2 \cdot -2$ -8</p>
<p>4. $(3 \cdot 2 \times 10^4)(1.1 \times 10^2)$ $(3.2 \times 1.1)(10^4 \times 10^2)$ 3.52×10^6</p>	<p>9. $F = \frac{9}{5}C + 32$ $59 = \frac{9}{5}C + 32$ $-32 = \frac{9}{5}C - 32$ $\frac{27}{5} = \frac{9}{5}C$ $15 = C$</p>
<p>5. $(6x^2 y^3)^2$ $(6x^2 y^3)(6x^2 y^3)$ $36x^4 y^6$</p>	<p>10. $\frac{x}{6} = \frac{28.7}{8.2}$ $8.2x = 6 \times 28.7$ $\frac{8.2x}{8.2} = \frac{172.2}{8.2}$ $x = 21.123$</p>

<p>11. $\frac{9 \text{ red}}{9 \text{ blue}}$ $P(\text{red}) = \frac{6}{10} = \frac{3}{5}$ $= \frac{30}{90}$ $= \frac{1}{3}$</p>	<p>16. $-6y - 4 + 3y - 2 = 24$ $+ 5 \quad + 1$ $-6y + 3y - 4 - 2 = 24$ $-3y - 12 = 24$ $\frac{-3y - 12}{+12} = \frac{24}{+12}$ $\frac{-3y}{-3} = \frac{36}{-3}$ $y = -12$</p>
<p>12. $1 \text{ km} = 0.621 \text{ m}$ $850 \text{ km} = ?$ $\frac{1}{850} = \frac{0.621}{m}$ $1m = 850 \times 0.621$ $m = 527 \text{ miles}$</p>	<p>17. $-0.3c + 0.5 = 2.6$ $-0.5 \quad -0.5$ $-0.3c = 2.1$ $\frac{-0.3c}{-0.3} = \frac{2.1}{-0.3}$ $c = -7$</p>
<p>13. $6, 13, 20, 27, \dots$ $+7, +7, +7$ Is arithmetic, common difference is 7, next 2 terms: 34, 41</p>	<p>18. $\frac{1}{g} = 0.125$ $\frac{-1}{-3} = -0.75$ -0.5 -2 $-2, -\frac{2}{3}, -0.5, \frac{1}{2}$</p>
<p>14. $(-2, 2) - (-6, 7)$ $L \quad C \quad 0$ $-2, 2 + 6, 7$ $4, 5$</p>	<p>19. $6c - 4d + 3cd$ $6.5 - 4.3 + 3.5 \cdot 3$ $30 - 12 + 45$ $18 + 45$ 63</p>
<p>15. $16 - 4x = -2(3x - 8)$ $16 - 4x = -4x + 16$ $+4x \quad +4x$ $16 = 16$ $x = R, \text{ all real numbers}$</p>	<p>20. $3n$</p>