1. D Slope $= -2$, equation of the line is $2x + y = 11$. y = intercept is (0,11)

2. A $\dfrac{8x^6y^9}{4x^2y^2 \bullet xy^5} = 2x^3y^2 = -216$

3. C $(3x + 2y)(2x + y)$ Sum of coefficients is $3 + 2 + 2 + 1 = 8$

4. B $|x - 3| < 2$; $-2 < x - 3 < 2$
$1 < x < 5$. Integers in solution are 2, 3, 4 - which is 3.

5. D $A \cup C = \{-2,-1,0,1,2,.,.\}$, $A \cap B = \{0,1,2\}$, $(A \cup C) \cap (A \cap B) = \{0,1,2\}$

6. D $9 - 2x + 1 \le 5x + 6; -7x \le -4; x \ge \dfrac{4}{7}$

7. D I is true. II is true. III is true, IV is false, the absolute value of 0 is 0. Three statements are correct.

8. A $15 - 3x - 36 - 4x + 189 = 14$
$x = 22$, value of $5(x - 20)$ is 10.

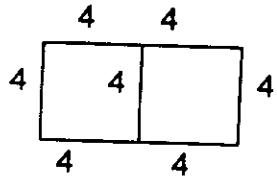
9. D Solve the system. $\left(\dfrac{18}{11}, -\dfrac{32}{11}\right)$

10. D $2S = n(a + L)$, $\dfrac{2s}{n} = a + L$, $L = \dfrac{2S}{n} - a$, which is equivalent to $\dfrac{2S - an}{n}$

11. C y – intercept of $y = 2x + 6$ is (0,6)
The x - intercept is (–3,0). x - intercept of line is (–9,0). Using (0,6) and (–9,0) as of the new line, $m = \dfrac{2}{3}$. So equation is y which is equivalent to $2x - 3y = -18$.

12. D A. $-3 + 4 + 1 < 0$; false
B. $\dfrac{1}{1 + 4 - 8} > 0$; false
C. $\dfrac{1 + 2}{1 - 8} > 1$; false
D. $-8 - 1 - 4 < 0$, or
N – P – P < 0 true

13. C The square has sides of 4. The perimeter of the rectangular piece of paper is 24.



14. B The solution of the system is (8,9). This point is in quadrant I. So, $8 + 9 + 1 = 18$.

15. C The 3rd and 4th whole numbers are 2 and 3 $\dfrac{1}{2} + \dfrac{1}{3} = \dfrac{5}{6}$. The reciprocal of $\dfrac{5}{6}$ is $\dfrac{6}{5}$.

16. E This is a difference of squares.
$(3x - 2 + 3x + 2)(3x - 2 - 3x - 2)$
$(6x)(-4) = -24x$

17. B $\frac{(x+2)(x+3)}{(x+4)(x+1)} \bullet \frac{x+1}{x-1} \bullet \frac{(x+4)(x-1)}{(x+3)(x-2)}$

Canceling leaves $\frac{x+2}{x-2}$

18. D $x + y = \frac{10}{3}, x = \frac{2}{3}y$. solving the system gives $x = \frac{4}{3}, y = 2$. Product $= \frac{8}{3}$.

19. B $x^{3a+b}y^{3a+b} = (xy)^{3a+b}$

20. D Setting $2x - 4 = 6x - 12$ gives a value of x as 6. The side of the triangle is 8.

21. C The boat going downstream travels at $x + 6$ km / hr for 3 hours which is $3x + 18km$. The other boat travels $x - 6$ km / hr for 5 hours which is $5x - 30$ km. Setting these equal and solving for x gives $x = 24$ km / hr. Downstream would be 30 km / hr @ 3 hours = 90 km. Round trip would be $90 \bullet 2$ or 180 km.

22. A Multiplying through by 60 gives the equation $20x - 48 = 8x - 5$.

$x = \frac{43}{12}$

23. B $\frac{\frac{7}{10}}{\frac{3}{10}} = \frac{7}{3}$

24. A Solving the system gives $x = \frac{1}{2}, y = -1$.

The value of $\frac{x+y}{x-y} = -\frac{1}{3}$.

25. E The sumof the given grades is $170 + x$.

$65 = \frac{170+x}{5}$ gives the $x = 5$.

26. C $3^4 - (-2)(4+2) = 153$

27. B The slope of the given line is $\frac{4}{3}$.

Slope of the $\perp$ is $-\frac{3}{4}$.

28. A $(x+y)^2 = 16; x + y = 4; x - y = 12;$ $x^2 - y^2 = 48$ so $y^2 - x^2 = -48$.

29. D 1.262662666...

30. A $3\Omega B = 14; 9 + B + 7 = 14; B = -2$