REVIEW: EXPONENTS

Simplify each expression.

1. 3^{-3}	2. $2a^0b^{-4}c$	3. $-4a^4 \cdot -5a^3$
4. $(4ab^2)(3a^3)(-2a^2b^4)$	5. $\dfrac{-15a^4b^3}{18a^2b^6}$	6. $\dfrac{20a^{-5}b^6c^0}{4a^6b^2}$
7. $\dfrac{(6a^2)(4a^6)}{3a^7}$	8. $(4b^5)^3$	9. $(3a^2)^3(4b^2)^0$
10. $\left(3a^{\frac{1}{3}}b^{\frac{1}{4}}\right)\left(7a^{\frac{4}{3}}b^{\frac{3}{2}}\right)$	11. $\left(6a^{\frac{1}{4}}\right)^2\left(a^{\frac{1}{2}}\right)^4$	12. $\dfrac{a^2b^4}{a^{\frac{4}{3}}b^{\frac{3}{2}}}$

Find each of the following.

13. If the area of a rectangle is $12a^7b^4$ and the width of the rectangle is $4a^2b^2$, what is the length of the rectangle?
14. The height of a parallelogram is $6a^2b^5$ and the base of a parallelogram is $4a^3b^4$. Find the area of the rectangle of the parallelogram using the formula $A = bh$.
15. Find the area of a square whose side length is a^5b^2.
16. A rectangular prism has a length of c^2d, a width of cd^4, and a height of c^3d^5. Which expression represents the volume of the rectangular prism?
17. Which of the following expressions is written in simplest form? Explain your answer.   F. 3^5x^2 H. a^0b G. $(5y)^3$ J. x^2y^3z

Review. Show all work.

18. After picking up his new truck from the dealership, Jason's new truck has 500 miles on the odometer. He plans to drive it to work, which is a 30 mile round trip.   a) Write an equation that could be used to find the total number of miles *m* Jason's truck will have traveled after he drives it for *d* days.   b) After some time, Jason checks his odometer. If his truck now has 800 miles on it, how many days has he been driving it (assuming he only uses it to drive to work)?

19. Twice a number plus 3 is the same as half of the number plus 12. What is the number?

Solve the following equations.

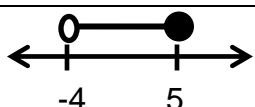|	
20. -4a + 6 = -18	21. -8(2x − 1) = 36
22. 3 + 5q = 9 + 4q	23. $\dfrac{x+2}{2x-6} = \dfrac{3}{8}$
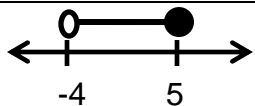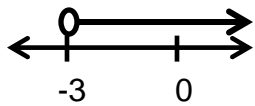
Solve the following inequalities and graph.
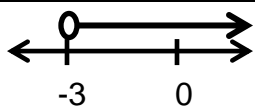
24. b − 5(b − 1) < 17	25. -13 < 4g + 3 ≤ 23
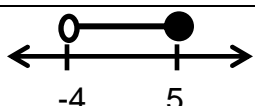
Answers in random order:

$\dfrac{5b^4}{a^{11}}$	$\dfrac{1}{27}$	$\dfrac{2c}{b^4}$	$8a$	100	$21a^{\frac{5}{3}}b^{\frac{7}{4}}$	$m = 500 + 30d$
$3a^5b^2$	$27a^6$	$-\dfrac{5a^2}{6b^3}$	$a^{\frac{2}{3}}b^{\frac{5}{2}}$	$64b^{15}$	$36a^{\frac{5}{2}}$	$-4 < g \le 5$
$20a^7$	$-24a^6b^6$	c^6d^{10}	$a^{10}b^4$	6	$\dfrac{-7}{4}$	
$24a^5b^9$	6	-17	$b > -3$	6	J	