Algebra I Part II 68A Name_____

1. Simplify. Write the answer as a simple fraction with all exponents positive. $\dfrac{\dfrac{3}{d}+\dfrac{d}{e}}{\dfrac{1}{e}}$

2. Simplify. Write the answer as a simple fraction with all exponents positive. $\dfrac{p^{-2}+q^{2}p^{-3}}{p^{-2}q^{3}}$

3. Simplify. Write the answer as a simple fraction with all exponents positive. $\dfrac{2-\dfrac{d}{e}}{\dfrac{2}{e}+e}$

4. Simplify. Write the answer as a simple fraction with all exponents positive. $\dfrac{p^{-3}+q^{-1}}{p^{-3}}$

5. Simplify. Write the answer as a simple fraction with all exponents positive. $\dfrac{x^{3}y^{3}z^{-3}-y^{-2}z^{3}}{-3x^{-2}-x^{-3}y^{-2}}$

6. Simplify. Write the answer as a simple fraction with all exponents positive. $\dfrac{\dfrac{2}{j}+\dfrac{j}{k}}{\dfrac{5}{k}}$

7. Simplify. Write the answer as a simple fraction with all exponents positive. $\dfrac{a^{-1}+ba^{-2}}{a^{-1}b^{5}}$

8. Simplify. Write the answer as a simple fraction with all exponents positive. $\dfrac{3-\dfrac{c}{d}}{\dfrac{1}{d}+c}$

9. Simplify. Write the answer as a simple fraction with all exponents positive. $\dfrac{r^{-2}+s^{-2}}{s^{-2}}$

10. Simplify. Write the answer as a simple fraction with all exponents positive.
$$\frac{x^{-3}yz^{-1}-y^{-3}z^{-2}}{-2x^{3}-x^{-2}y^{2}}$$

11. Simplify. Write the answer as a simple fraction with all exponents positive.
$$\frac{a^{3}x^{-1}+a^{3}b^{-1}x^{-3}}{-3+b^{-1}x-a^{-1}b^{-1}x}$$

12. Simplify. Write the answer as a simple fraction with all exponents positive. $$\frac{\frac{a^{2}xy}{3b^{3}}-\frac{2a^{3}}{x^{2}}}{3-\frac{a^{-3}b^{2}}{x^{2}}}$$

Solve the system by the elimination method:

13. $2x+y=-2$
$x-y=-7$

14. $2x-2y=4$
$2x+3y=-11$

15. $4x+4y=12$
$3x-4y=-26$

16. Solve the system by the substitution method.
$x=3y+9$
$6x+y=-22$

17. Solve the system by the substitution method.
$x=2y+5$
$3x+y=57$

18. Solve the system by the substitution method.
$x=5y+4$
$8x+y=73$

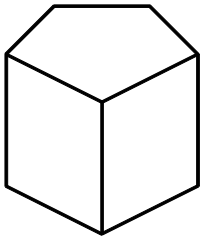
19. A ski club planned a trip to Squaw Valley, and 17 of the members signed up. If 90% of the members did not sign up, how many members does the club have?

20. The experimental drug caused side effects in 5% of those who took it. If 250 experienced side effects, how many people took the experimental drug?

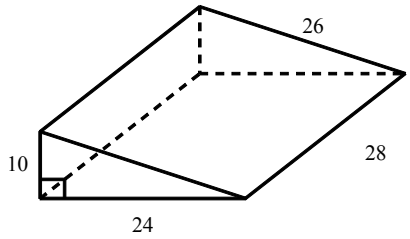
21. The number of bacteria increased by 220 percent overnight. If there were 40,000 bacteria yesterday, how many bacteria were present this morning?

22. The advertisement of the super blow-out sale caused the number of shoppers to increase by 270 percent. If 410 shoppers were there before the advertisement, how many were there after the advertisement?

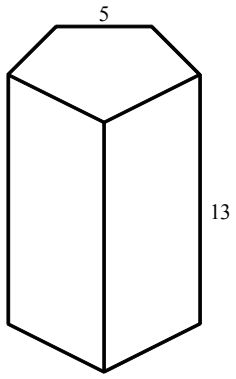
23. The area of a base of a right pentagonal prism is 110 $in.^2$ and the length of a lateral edge is 11 in.. Find the volume of the right pentagonal prism.



24. Find the volume and the total surface area of the right triangular prism. Dimensions are in meters.



25. Find the lateral surface area of this right prism whose bases are regular pentagons. Dimensions are in centimeters.



26. Evaluate: $-\dfrac{-b-a\cdot 2-a}{1+\sqrt{28-\left(-b^3\right)}} - \left[(a-b\cdot 5+3)\dfrac{1}{3}+4\right]^0$ for $a=-1$ and $b=-3$

27. Evaluate. Do not use a calculator. $\sqrt{81}$ - $\sqrt{64}$ + $\sqrt{36}$ + $\sqrt{144}$

28. Evaluate: $3^2-5^2\pm\sqrt{9}$