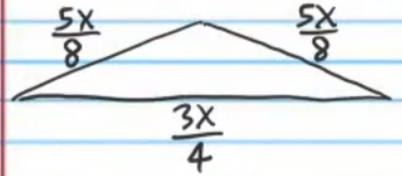
Name
Date
Course

Applications of Algebra (Part I) Homework

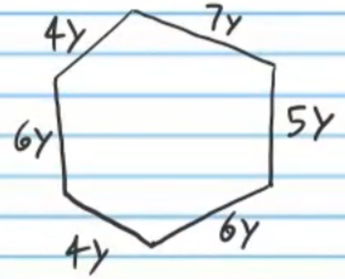
Find an expression for each of the values below.

① The perimeter of the triangle below.



2x

② The perimeter of the hexagon below.



32y

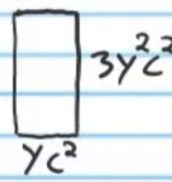
③ The perimeter of a rectangle with length 2.3z and width 0.99z.

6.58z

④ The perimeter of a square with side length 2x. Remember, all sides of a square have equal length.

8x

⑤ The area of the rectangle below.



$3y^3c^4$

⑥ The area of a triangle with height 3.6x and base 2.008x.

$3.6144x^2$

⑦ The area of a square with side length $\frac{6xy}{7z^3}$.

$\frac{36x^2y^2}{49z^6}$

⑧ The area of a triangle with base $\frac{2x}{5}$ and height $\frac{3x}{4}$. Reference problem #12 in class.

$\frac{3x^2}{20}$

Find an expression for the values below (keep π as a factor).

⑨ The volume of a rectangular prism with length $6x^3$, width $2x$, and height $3x^2$.

$36x^6$

⑩ The area of a circle with radius $7y^3$.

$49\pi y^6$

⑪ The surface area of a rectangular prism with length $9z$, width z, and height $3z$.

$78z^2$

⑫ The area of a parallelogram with base $5.23x^2yz^2$ and height $2.03x^4y^2z^4$.

$10.6169x^6y^3z^6$

⑬ The area of a trapezoid with first base $3y$, second base y, and height $2x^5y$.

$4x^5y^2$

⑭ The volume of a cylinder with diameter $\frac{7x}{2}$ and height $4x^2$.

$\frac{49\pi x^4}{4}$

⑮ The volume of a sphere with radius $3z^7$.

$36\pi z^{21}$

(16) The surface area of a sphere with radius $8xyz$. $256\pi x^2y^2z^2$

(17) The circumference of a circle with diameter $14x^5yz$. $14\pi x^5yz$

Evaluate. Show the formula that you use and be sure to use the new versions, without "x" or "÷" signs.

(18) Find the area of a parallelogram with base 2 feet, and height 8 feet. $16\ ft^2$

(19) Find the volume of a cylinder with radius 5 inches and height 3 inches (keep π as a factor). $75\pi\ in^3$

(20) Find the area of a trapezoid with bases 6 cm and 1 cm, and height 3 cm. $10.5\ cm^2$

(21) Find the volume of a rectangular prism with length $\frac{5}{6}$ miles, width $\frac{3}{3}$ miles, and height $\frac{1}{2}$ miles. $\frac{5}{18}\ mi^3$

(22) Find the surface area of the rectangular prism in the previous problem. $\frac{47}{18}\ mi^2$

(23) Evaluate your answer from problem #5 if $c=1$ and $y=2$. 24

(24) Evaluate your answer from problem #8 if $x=3$. $\frac{27}{20}$

(25) Evaluate your answer from problem #12 if $x=1$, $y=3$, and $z=1$. You can use a calculator. 286.6563

(26) Find the amount of money in Linsey's new bank account if she deposits $P=489$ dollars and earns simple interest at $r=0.07$ rate paid yearly for $t=6$ years. Use the following formula: $A=P+Prt$. \$694.38

(27) Tim's salary decreased by $r=0.13$. His original salary was $F=\$29{,}144$. What is his new salary? Use the following formula: $N=F-Fr$. \$25,355.28