SATPREP

Assignment :*Evaluate One Variable in Terms of Another*

Easy

1. If $xy^3 = z$, $z = ky^2$, and $ky \neq 0$, which of the following is equal to k?
   a) xy
   b) $\frac{x}{y}$
   c) $x - 1$
   d) $x + y$

2. If $2x + y = x + 5$, what is y in terms of x?
   a) $5 - x$
   b) $x + 5$
   c) $1 - 5x$
   d) $1 - 2x$

3. If $5x = 4y$ and $2y = 5z$, what is the value of x in terms of z?
   a) z
   b) $2z$
   c) $3z$
   d) $4z$

4. If x and y are positive and $3x^2y^{-1} = 27x$, what is y^{-1} in term of x?
   a) $\frac{x}{9}$
   b) $\frac{9}{x}$
   c) $\frac{x^2}{9}$
   d) $\frac{x}{3}$

Medium

5. If $x^{-1}y = 5$, what does y equal in term of x?
   a) $-5x$
   b) x
   c) $-x$
   d) $5x$

6. A right circular cylinder with radius 3 and height 7 has a volume v, In terms of v, what is the volume of the right circular cylinder with radius 3 and height 14?
   a) $v + 7$
   b) $7v$
   c) $5v$
   d) $2v$

7. If $y = x\sqrt{5}$ and $x \neq 0$, what does x^2 equal in terms of y?
   a) $\frac{y^2}{5}$
   b) $5y^2$
   c) $\frac{25}{y^2}$
   d) $\frac{y^2}{25}$

8. The price of green tea leaves is D dollars for 5 ounces and each ounce makes x bottles of green tea drink. In terms of D and x, which of the following expressions shows the cost of making 1 bottle of green tea drink?

a) $5Dx$
b) $\frac{5D}{x}$
c) $\frac{5x}{D}$
d) $\frac{D}{5x}$

Hard

9. If $x = 2z + 4$ and $y = 1 + 4z^2$, what is y in terms of x?

a) $x^2 + 8x + 17$
b) $x^2 - 8x + 17$
c) $4x^2 - 8x + 17$
d) $4x^2 - 8x + 68$

10. If $x = 2(3z^2 + z + 4)$ and $y = -z + 3$, what is x in terms of y?

a) $6y^2 - 38y - 68$
b) $6y^2 + 38y - 132$
c) $6y^2 - 38y + 68$
d) $6y^2 + 38y + 68$

11. If $x = y^2$ for any positive integer x, and if $z = x^3 + x^4$, what is z in terms of y?

a) $y^2 + y^3$
b) y^3
c) $y^6 + y^3$
d) $y^6 + y^8$

12. If $x = 2y^2 + 3y + 4$ and $z = -y + 1$, what is x in terms of z?

a) $2z^2 - 7z - 9$
b) $2z^2 - 7z + 7$
c) $2z^2 + 7z + 9$
d) $2z^2 - 7z + 9$