

UB SAT 2009
Worksheet #17
Plugging-In Strategy (choosing your own number(s))

Examples (will be done together)

If p is an odd integer, which of the following must also be an odd integer?

- (A) $p+1$ (B) $\frac{p}{2}$ (C) $p+2$ (D) $2p$ (E) $p-1$

If $\frac{y}{3} = 6x$, then in terms of y , $x =$

- (A) $3y$ (B) $2y$ (C) y (D) $\frac{y}{2}$ (E) $\frac{y}{18}$

Mary spilled $\frac{2}{5}$ of her peanuts, and Jessica ate $\frac{1}{3}$ of what was left. Jessica then gave the peanuts to Max and Sam, who each ate half of what remained. What fractional part of Mary's peanuts did Sam eat?

- (A) $\frac{1}{15}$ (B) $\frac{1}{10}$ (C) $\frac{1}{5}$ (D) $\frac{1}{3}$ (E) $\frac{4}{5}$

Independent Practice

1. If $x+3 = a$, then $2x+6 =$

- (A) $a+3$ (B) $a+6$ (C) $2a$ (D) $2a+3$ (E) $2a+6$

2. How old was a person exactly 1 year ago if exactly x years ago the person was y years old?

- (A) $y-1$ (B) $y-x-1$ (C) $x-y-1$ (D) $y+x+1$ (E) $y+x-1$

3. How many seconds are there in m minutes and s seconds?

- (A) $60m + s$ (B) $m + 60s$ (C) $60(m + s)$ (D) $\frac{m+s}{60}$ (E) $\frac{m}{60} + s$

4. If $x^3 = y^9$, what is x in terms of y ?

- (A) \sqrt{y} (B) y^2 (C) y^3 (D) y^6 (E) y^{12}

5. If $2r = 5s$ and $5s = 6t$, what does r equal in terms of t ?

- (A) $\frac{12}{25}t$ (B) $\frac{6}{5}t$ (C) $3t$ (D) $15t$ (E) $30t$

6. The sum of two numbers that differ by 1 is t . In terms of t , what is the value of the greater of the two numbers?

- (A) $\frac{t-1}{2}$ (B) $\frac{t}{2}$ (C) $\frac{t+1}{2}$ (D) $\frac{t}{2}+1$ (E) $\frac{2t-1}{2}$

7. A total of k passengers went on a bus trip. Each of the n buses that were used to transport the passengers could seat a maximum of x passengers. If one bus had 3 empty seats and the remaining buses were filled, which of the following expresses the relationship among n , x , and k ?

- (A) $nx - 3 = k$ (B) $nx + 3 = k$ (C) $n + x + 3 = k$
(D) $nk = x + 3$ (E) $nk = x - 3$

8. A list of numbers consists of p positive and n negative numbers. If a number is picked at random from this list, the probability that the number is positive is $\frac{3}{5}$. What is the value of $\frac{n}{p}$?

- (A) $\frac{3}{8}$ (B) $\frac{5}{8}$ (C) $\frac{2}{3}$ (D) $\frac{3}{2}$ (E) $\frac{8}{3}$

9. If x and y are positive consecutive odd integers, where $y > x$, which of the following is equal to $y^2 - x^2$?

- (A) $2x$ (B) $4x$ (C) $2x+2$ (D) $2x+4$ (E) $4x+4$

10. If m and k are positive and $10m^2k^{-1} = 100m$, what is m^{-1} in terms of k ?

- (A) $\frac{k}{10}$ (B) $\frac{k}{90}$ (C) $\frac{\sqrt{k}}{10}$ (D) $\frac{1}{10k}$ (E) $\frac{1}{90k}$

11. The price of ground coffee beans is d dollars for 8 ounces and each ounce makes c cups of brewed coffee. In terms of c and d , what is the dollar cost of the ground coffee beans required to make 1 cup of brewed coffee?

- (A) $\frac{d}{8c}$ (B) $\frac{cd}{8}$ (C) $\frac{8c}{d}$ (D) $\frac{8d}{c}$ (E) $8cd$

12. If $y = \frac{5x^3}{z}$, what happens to the value of y when both x and z are doubled?

- (A) y is not changed.
(B) y is halved.
(C) y is doubled.
(D) y is tripled.
(E) y is multiplied by 4.

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Answers

1. C

2. E

3. A

4. C

5. C

6. C

7. A

8. C

9. D

10. D

11. A

12. E