

Physics 210B, Math Pretest. 5 Points Each.

1. If $x = yz$, then

A $y = xz$.

B $z = xy$.

C $y = \frac{x}{z}$.

D $z = \frac{y}{x}$.

2. If $3(x - 1) + 6 = 15$, then

A $x = 3$.

B $x = 4$.

C $x = 5$.

D $x = 6$.

3. Suppose $x \times y = \text{constant}$, then

A if x increases, y also increases.

B if x increases, y decreases.

C increasing x will not affect y .

D decreasing x will decrease y .

4. $1.6 \times 10^8 \times 0.4 \times 10^{-3} =$

A 6.4×10^3 .

B 6.4×10^4 .

C 6.4×10^5 .

D 6.4×10^6 .

5. $\frac{1.6 \times 10^{-8}}{0.4 \times 10^3} =$

A 4×10^{-11} .

B 4×10^{-6} .

C 4×10^{-5} .

D 4×10^5 .

6. $1.6 \times 10^{-8} \times 0.4 \times 10^{-3} =$

A 6.4×10^{-15} .

B 6.4×10^{-12} .

C 6.4×10^5 .

D 6.4×10^{12} .

7. $\frac{1.6 \times 10^{-8}}{0.4 \times 10^{-3}} =$

A 4×10^{-5} .

B 4×10^{-2} .

C 4×10^2 .

D 4×10^5 .

8. If $x \geq y$ and $a = 6$, then

A $ax \geq ay$.

B $ax \leq ay$.

C $ax = ay$.

D $ax < ay$.

9. If $x > y$ and $y > z$, then

A $x \leq z$.

B $x = z$.

C $x \geq z$.

D $x > z$.

10. If $x = \frac{y}{z}$, then

A $y = xz$.

B $y = \frac{x}{z}$.

C $y = \frac{z}{x}$.

D $y = \frac{1}{xz}$.

11. If $a^2 + b^2 = 169$ and $a = 5$, then $b =$

A 12.

B -12.

C 12 or -12.

D 13.

12. $\frac{\frac{25}{15}}{\frac{49}{14}} =$

A $\frac{3}{7}$.

B $\frac{5}{14}$.

C $\frac{10}{21}$.

D $\frac{15}{49}$.

13. If $x > y > 0$, then $\frac{1}{x}$ is ----- $\frac{1}{y}$.

- A greater than
- B smaller than
- C equal to

14. Refer to Fig.1. If $AB=6$, $AC=8$, what is BC ?

- A 6.
- B 8.
- C 10.
- D 14.

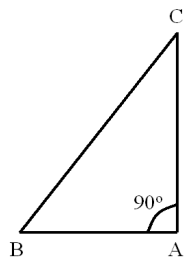


Figure 1: A right triangle with $AB = 6$, $AC = 8$.

15. If $\theta = 0^\circ$, then $\sin\theta =$

- A 0.
- B 0.5.
- C 0.75
- D 1.

16. If $\theta = 0^\circ$, then $\cos\theta =$

- A 0.
- B 0.5.
- C 0.75
- D 1.

17. If $\theta = 90^\circ$, then $\sin\theta =$

- A 0.

B 0.5.

C 0.75

D 1.

18. If $\theta = 90^\circ$, then $\cos\theta =$

A 0.

B 0.5.

C 0.75

D 1.

19. In general, if you have a right triangle as shown in Fig.2, then $\sin\theta =$

A $\frac{AC}{AB}$.

B $\frac{AC}{BC}$.

C $\frac{AB}{BC}$.

D $\frac{1}{AC}$.

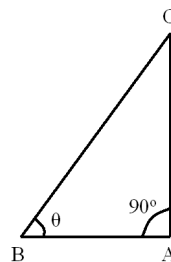


Figure 2: A right triangle with $AB = 6$, $BC = 8$.

20. Refer to Fig.2 again. What is $\cos\theta$?

A $\frac{AC}{AB}$.

B $\frac{AC}{BC}$.

C $\frac{AB}{BC}$.

D $\frac{1}{AB}$.