

1. $(x+3)(2x+4)=?$

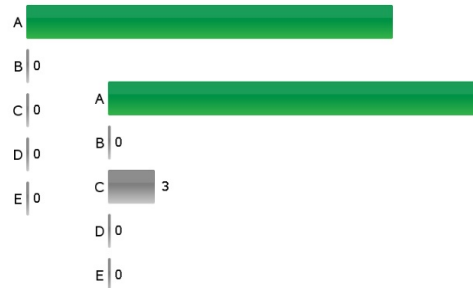
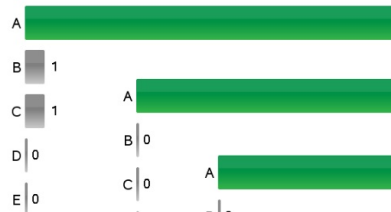
(A) $2x^2 + 10x + 12$

(B) $x^2 + 5x + 6$

(C) $2x^2 + 6x + 12$

(D) $x^2 + 3x + 6$

(E) $2x^2 + 2x + 12$



$4x + 6x = 10x$

2. If the angles of a triangle are $3x$, $x + 10$, and $2x - 40$ what is the measure of the smallest angle?

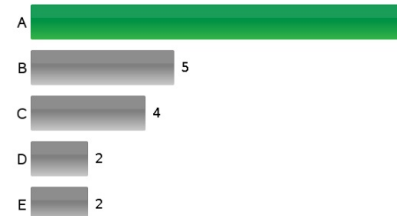
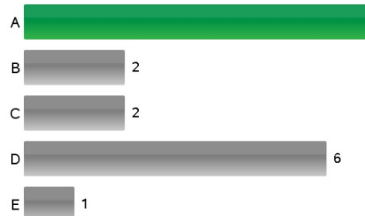
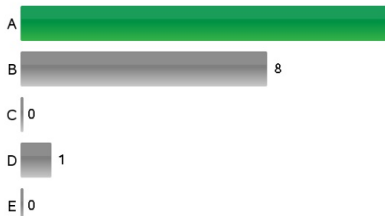
(A) 30°

(B) 35°

(C) 40°

(D) 45°

(E) 50°



\rightarrow add to 180

$$3x + x + 10 + 2x - 40 = 180$$

$$6x - 30 = 180$$

$$\frac{6x}{6} = \frac{210}{6} \rightarrow x = 35$$

$3(35) = 105$

$35 + 10 = 45$

$2(35) - 40 = 30$

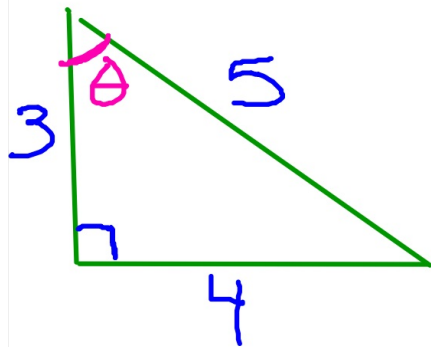
3. If the 3 sides of a right triangle measure 3 centimeters, 4 centimeters and 5 centimeters, what is the sine of the angle opposite the side with a length of 4 centimeters?

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

A
B
C
D
E

A
B
C
D
E

A
B
C
D
E



$$\sin \theta = \frac{\text{opp}}{\text{hyp}} = \frac{4}{5}$$

4. What is the $\sin\left(\frac{\pi}{4}\right)$?

- (A) 0 (B) $\frac{1}{2}$ (C) $\frac{\sqrt{2}}{2}$ (D) $\frac{\sqrt{3}}{2}$ (E) 1

A
B
C
D
E

A
B
C
D
E

A
B
C
D
E

5. What is the $\cos\left(\frac{\pi}{3}\right)$?

(A) 0

(B) $\frac{1}{2}$

(C) $\frac{\sqrt{2}}{2}$

(D) $\frac{\sqrt{3}}{2}$

(E) 1

A | 0

B

C | 1

D

E | 0

A | 0

B

C | 0

D

E | 1

A | 0

B

C | 0

D

E | 1

6. What is the $\tan\left(\frac{\pi}{6}\right)$?

(A) $\frac{1}{\sqrt{3}}$

(B) $\frac{\sqrt{3}}{2}$

(C) $\sqrt{3}$

(D) 1

(E) undefined

A

B

C

D

E

A

B

C

D

E

A

B

C

D

E

7. In the first quadrant, $\left(\text{for } 0 \leq \theta \leq \frac{\pi}{2} \right)$, where does $\sec \theta = \frac{2}{\sqrt{3}}$?

(A) 0

(B) $\frac{\pi}{6}$

(C) $\frac{\pi}{4}$

(D) $\frac{\pi}{3}$

(E) $\frac{\pi}{2}$

A 1

B 1

C 2

D 9

E 2

A 0

B 1

C 5

D 3

E 2

A 0

B 1

C 1

D 6

E 3

Sec θ is the reciprocal
of $\cos \theta$ $\cos \theta = \frac{\sqrt{3}}{2}$

8. In the first quadrant, $\left(\text{for } 0 \leq \theta \leq \frac{\pi}{2} \right)$, where does $\cot \theta = 1$?

(A) 0

(B) $\frac{\pi}{6}$

(C) $\frac{\pi}{4}$

(D) $\frac{\pi}{3}$

(E) $\frac{\pi}{2}$

A 4

B 0

C 3

D 4

E 4

A 1

B 3

C 9

D 0

E 4

A 1

B 0

C 6

D 0

E 3

9. Which function is the reciprocal for $\csc \theta$?

(A) $\cos \theta$

(B) $\sin \theta$

(C) $\tan \theta$

(D) $\sec \theta$

(E) $\cot \theta$

A

B

C

D

E

A

B

C

D

E

A

B

C

D

E

10. Convert $\frac{2\pi}{3}$ radians to degrees:

(A) 120°

(B) 270°

(C) 240°

(D) 540°

(E) None of these

A

B

C

D

E

A

B

C

D

E

A

B

C

D

E

$$\frac{\pi}{180} = \frac{\frac{2\pi}{3}}{x} \rightarrow \pi x = \frac{2\pi}{3}(180)$$

$$\pi x = \frac{360\pi}{3}$$

$$\frac{\pi x}{\pi} = \frac{120\pi}{\pi}$$

$$x = 120^\circ$$

