

F.TF.B.7: Using Inverse Trigonometric Functions 21 The value of $\sin(\text{Arc cos } 1)$ is

- 1) 1
- 2) $\frac{1}{2}$
- 3) $\frac{1}{2}\sqrt{3}$
- 4) 0

2 What is the exact value of $\cos\left(\text{Arc sin } \frac{1}{2}\right)$?

- 1) $\frac{1}{2}$
- 2) $\sqrt{3}$
- 3) $\frac{\sqrt{3}}{2}$
- 4) $\frac{\sqrt{2}}{2}$

3 If $y = \sin\left(\text{Arc cos } \frac{1}{2}\right)$, the value of y is

- 1) $\frac{1}{2}$
- 2) $\frac{\sqrt{3}}{2}$
- 3) 30°
- 4) 60°

4 The value of $\cos\left(\text{Arc sin } \frac{\sqrt{3}}{2}\right)$ is

- 1) 1
- 2) $\frac{1}{2}$
- 3) $\frac{\sqrt{3}}{3}$
- 4) $\sqrt{3}$

5 What is the value of $\sin\left(\text{Arc cos } \frac{1}{x}\right)$?

- 1) $\frac{\sqrt{1-x^2}}{x}$
- 2) $\frac{\sqrt{1+x^2}}{x}$
- 3) $\frac{\sqrt{x^2-1}}{x}$
- 4) $\frac{x}{\sqrt{x^2+1}}$

6 The value of $\tan(\text{Arc sin } 1)$ is

- 1) 1
- 2) -1
- 3) 90
- 4) undefined

7 If $\theta = \text{Arc cos } \frac{\sqrt{2}}{2}$, what is the value of $\tan \theta$?

- 1) 1
- 2) $\sqrt{2}$
- 3) $\sqrt{3}$
- 4) $\frac{\sqrt{3}}{3}$

8 What is the value of $\tan\left(\text{Arc cos } -\frac{3}{5}\right)$?

- 1) $\frac{5}{3}$
- 2) $\frac{4}{3}$
- 3) $-\frac{3}{4}$
- 4) $-\frac{4}{3}$

- 9 What is the value of $\tan\left(\text{Arc cos } \frac{5}{13}\right)$?
- 1) $\frac{12}{13}$
 - 2) $\frac{5}{12}$
 - 3) $\frac{12}{5}$
 - 4) $\frac{13}{5}$
- 10 What is the value of $\tan\left(\text{Arc cos } \frac{15}{17}\right)$?
- 1) $\frac{8}{15}$
 - 2) $\frac{8}{17}$
 - 3) $\frac{15}{8}$
 - 4) $\frac{17}{8}$
- 11 If $\tan\left(\text{Arc cos } \frac{\sqrt{3}}{k}\right) = \frac{\sqrt{3}}{3}$, then k is
- 1) 1
 - 2) 2
 - 3) $\sqrt{2}$
 - 4) $3\sqrt{2}$
- 12 If $f(x) = \sin(\text{Arc tan } x)$, the value of $f(1)$ is
- 1) $\sqrt{2}$
 - 2) $\frac{\sqrt{2}}{2}$
 - 3) $\frac{\sqrt{3}}{2}$
 - 4) $\frac{\sqrt{3}}{3}$
- 13 The value of $\cos\left(\text{Arc tan } \sqrt{3}\right)$ is
- 1) 1
 - 2) $\frac{1}{2}$
 - 3) $\frac{1}{2}\sqrt{3}$
 - 4) $\frac{1}{2}\sqrt{2}$
- 14 What is the value of y if $y = \sin\left(\text{Arctan } \frac{5}{12}\right)$?
- 1) $\frac{5}{13}$
 - 2) $\frac{12}{13}$
 - 3) $\frac{13}{12}$
 - 4) $\frac{13}{5}$
- 15 What is a value of $\cos\left(\text{Arc tan } \frac{2}{3}\right)$?
- 1) $\frac{\sqrt{13}}{3}$
 - 2) $\frac{3\sqrt{13}}{13}$
 - 3) 5
 - 4) 13
- 16 What is the value of $\csc\left(\text{Arc sin } \frac{3}{4}\right)$?
- 1) $\frac{3}{4}$
 - 2) $\frac{4}{3}$
 - 3) $\frac{\sqrt{7}}{4}$
 - 4) $\frac{4}{\sqrt{7}}$

Regents Exam Questions

F.TF.B.7: Using Inverse Trigonometric Functions 2

www.jmap.org

Name: _____

17 Evaluate: $\text{Arc sin}(\cos 60^\circ)$

18 Find the value of $\cos\left(\text{Arc sin}\frac{3}{5}\right)$.

19 Find the value of $\cos\left(\text{Arc sin}\frac{4}{5}\right)$.

20 Find the value of $\cos\left(\text{Arc sin}\frac{5}{13}\right)$.

21 What is the value of $\sin\left(\text{Arc cos}\frac{8}{17}\right)$?

22 Find $\tan\left(\text{Arc sin}\frac{\sqrt{2}}{2}\right)$.

23 Find $\tan\left(\text{Arc cos}\frac{3}{5}\right)$.

24 Find the value of $\tan\left(\text{Arc sin}\frac{3}{5}\right)$.

25 Find $\tan\left(\text{Arc sin}\frac{5}{13}\right)$.

26 Find the value of $\tan\left(\text{Arc sin}\frac{5}{6}\right)$.

27 Find the value of $\sin\left(\text{Arc tan}\frac{\sqrt{3}}{3}\right)$.

28 What is the value of $\sin\left(\text{Arc tan}\sqrt{3}\right)$?

29 Evaluate: $\csc\left(\text{Arc sin}\frac{\sqrt{3}}{2}\right)$

30 What is the value of $\sec\left(\text{Arc cos}\frac{5}{7}\right)$?

F.TF.B.7: Using Inverse Trigonometric Functions 2

Answer Section

- 1 ANS: 4 REF: 019921siii
 2 ANS: 3 REF: 061008b
 3 ANS: 2 REF: 088618siii
 4 ANS: 2 REF: 069916siii
 5 ANS: 3 REF: 010029siii
 6 ANS: 4 REF: 010221siii
 7 ANS: 1 REF: 068427siii
 8 ANS: 4 REF: 080123siii
 9 ANS: 3 REF: 060322siii
 10 ANS: 1

$$\text{If } \sin \theta = \frac{15}{17}, \text{ then } \cos \theta = \frac{8}{17}. \quad \tan \theta = \frac{\frac{8}{17}}{\frac{15}{17}} = \frac{8}{15}$$

REF: 081508a2

- 11 ANS: 2

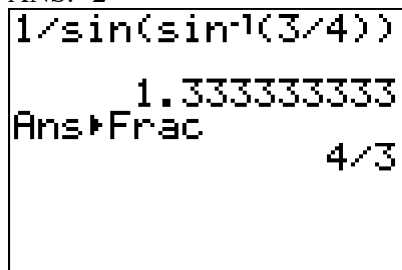
$$\tan 30 = \frac{\sqrt{3}}{3}. \quad \text{Arc cos } \frac{\sqrt{3}}{k} = 30$$

$$\frac{\sqrt{3}}{k} = \cos 30$$

$$k = 2$$

REF: 061323a2

- 12 ANS: 2 REF: 060023siii
 13 ANS: 2 REF: 089320siii
 14 ANS: 1 REF: 089817siii
 15 ANS: 2 REF: 060225siii
 16 ANS: 2



1/sin(sin⁻¹(3/4))
 1.333333333
 Ans▶Frac
 4/3

REF: 080817b

- 17 ANS:
-
- 30°

REF: 089404siii

18 ANS:

$$\frac{4}{5}$$

REF: 018504siii

19 ANS:

$$\frac{3}{5}$$

REF: 018908siii

20 ANS:

$$\frac{12}{13}$$

REF: 068808siii

21 ANS:

$$\frac{15}{17}$$

REF: 010114siii

22 ANS:

$$1$$

REF: 068105siii

23 ANS:

$$\frac{4}{3}$$

REF: 018417siii

24 ANS:

$$\frac{3}{4}$$

REF: 068516siii

25 ANS:

$$\frac{5}{12}$$

REF: 068711siii

26 ANS:

$$\frac{5}{\sqrt{11}}$$

REF: 069808siii

27 ANS:

$$\frac{1}{2}$$

REF: 019511siii

28 ANS:

$$\frac{\sqrt{3}}{2}$$

REF: 080003siii

29 ANS:

$$\frac{2}{\sqrt{3}}$$

REF: 069410siii

30 ANS:

$$\frac{7}{5}$$

REF: 010315siii