

**MULTIPLE CHOICE.** Choose the one alternative that best completes the statement or answers the question.

**Convert the rectangular equation to a polar equation that expresses  $r$  in terms of  $\theta$ .**

1)  $x = 4$  1) \_\_\_\_\_

A)  $r = \frac{4}{\sin \theta}$

B)  $\cos \theta = 4$

C)  $r = \frac{4}{\cos \theta}$

D)  $r = 4$

2)  $x^2 + y^2 = 9$  2) \_\_\_\_\_

A)  $r(\cos \theta + \sin \theta) = 9$

B)  $r(\cos \theta + \sin \theta) = 3$

C)  $r = 9$

D)  $r = 3$

3)  $y = 6$  3) \_\_\_\_\_

A)  $\sin \theta = 6$

B)  $r = 6$

C)  $r = \frac{6}{\cos \theta}$

D)  $r = \frac{6}{\sin \theta}$

4)  $y = 3$  4) \_\_\_\_\_

A)  $r = 3$

B)  $\sin \theta = 3$

C)  $r = \frac{3}{\cos \theta}$

D)  $r = \frac{3}{\sin \theta}$

5)  $(x - 6)^2 + y^2 = 36$  5) \_\_\_\_\_

A)  $r = 12 \sin \theta$

B)  $r^2 = 12 \cos \theta$

C)  $r = 12 \cos \theta$

D)  $r = -12 \sin \theta + 36$

6)  $x = 1$  6) \_\_\_\_\_

A)  $\cos \theta = 1$

B)  $r = 1$

C)  $r = \frac{1}{\sin \theta}$

D)  $r = \frac{1}{\cos \theta}$

7)  $x^2 + y^2 = 16$  7) \_\_\_\_\_

A)  $r(\cos \theta + \sin \theta) = 4$

B)  $r(\cos \theta + \sin \theta) = 16$

C)  $r = 4$

D)  $r = 16$

8)  $8x - 3y + 10 = 0$  8) \_\_\_\_\_

A)  $r = \frac{-10}{(8 \sin \theta - 3 \cos \theta)}$

B)  $8 \cos \theta - 3 \sin \theta = -10$

C)  $8 \cos \theta - 3 \sin \theta = 10$

D)  $r = \frac{-10}{(8 \cos \theta - 3 \sin \theta)}$

9)  $(x - 16)^2 + y^2 = 256$  9) \_\_\_\_\_

A)  $r = 32 \cos \theta$

B)  $r = -32 \sin \theta + 256$

C)  $r^2 = 32 \cos \theta$

D)  $r = 32 \sin \theta$

10)  $6x - 5y + 10 = 0$

A)  $6 \cos \theta - 5 \sin \theta = 10$

C)  $6 \cos \theta - 5 \sin \theta = -10$

B)  $r = \frac{-10}{(6 \sin \theta - 5 \cos \theta)}$

D)  $r = \frac{-10}{(6 \cos \theta - 5 \sin \theta)}$

10) \_\_\_\_\_

**Convert the polar equation to a rectangular equation.**

11)  $r = 5$

A)  $y = 5$

B)  $y^2 = 25$

C)  $x^2 + y^2 = 25$

D)  $x = 5$

11) \_\_\_\_\_

12)  $r = 6 \cos \theta + 7 \sin \theta$

A)  $x^2 + y^2 = 7x + 6y$

C)  $6x + 7y = 0$

B)  $x^2 - y^2 = 6x + 7y$

D)  $x^2 + y^2 = 6x + 7y$

12) \_\_\_\_\_

13)  $\theta = \frac{2\pi}{3}$

A)  $y = -\sqrt{3}x^2$

B)  $y = -\sqrt{3}x$

C)  $x^2 + y^2 = 1$

D)  $y = \frac{\sqrt{3}}{3}x$

13) \_\_\_\_\_

14)  $r \cos \theta = 8$

A)  $x^2 + y^2 = 8$

B)  $y^2 = 8$

C)  $x = 8$

D)  $y = 8$

14) \_\_\_\_\_

15)  $\theta = \frac{5\pi}{6}$

A)  $y = \sqrt{3}x$

B)  $x^2 + y^2 = 1$

C)  $y = -\frac{\sqrt{3}}{3}x^2$

D)  $y = -\frac{\sqrt{3}}{3}x$

15) \_\_\_\_\_

16)  $r = -5 \cos \theta$

A)  $x = -5$

C)  $x^2 + y^2 = 5$

B)  $\left(x + \frac{5}{2}\right)^2 + y^2 = \frac{25}{4}$

D)  $\left(x - \frac{5}{2}\right)^2 + y^2 = 25$

16) \_\_\_\_\_

17)  $r = 4 \csc \theta$

A)  $y = 4$

B)  $x^2 + y^2 = 4$

C)  $y^2 = 4$

D)  $x = 4$

17) \_\_\_\_\_

18)  $r = -3 \cos \theta$

A)  $\left(x + \frac{3}{2}\right)^2 + y^2 = \frac{9}{4}$

C)  $\left(x - \frac{3}{2}\right)^2 + y^2 = 9$

B)  $x^2 + y^2 = 3$

D)  $x = -3$

18) \_\_\_\_\_

19)  $r = 6 \csc \theta$

A)  $y = 6$

B)  $x = 6$

C)  $x^2 + y^2 = 6$

D)  $y^2 = 6$

19) \_\_\_\_\_

20)  $r = 8 \cos \theta + 9 \sin \theta$

A)  $x^2 - y^2 = 8x + 9y$

C)  $x^2 + y^2 = 8x + 9y$

B)  $8x + 9y = 0$

D)  $x^2 + y^2 = 9x + 8y$

20) \_\_\_\_\_

## Answer Key

Testname: POLARWS3

- 1) C
- 2) D
- 3) D
- 4) D
- 5) C
- 6) D
- 7) C
- 8) D
- 9) A
- 10) D
- 11) C
- 12) D
- 13) B
- 14) C
- 15) D
- 16) B
- 17) A
- 18) A
- 19) A
- 20) C