

7.5 Trigonometry short version

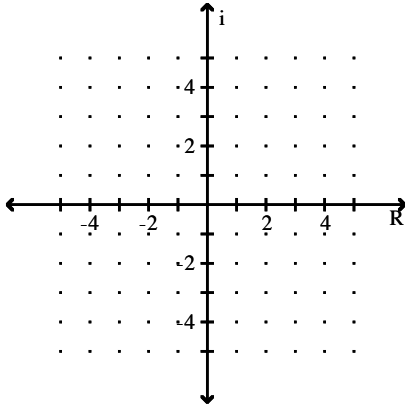
Name _____

SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.

Plot the complex number.

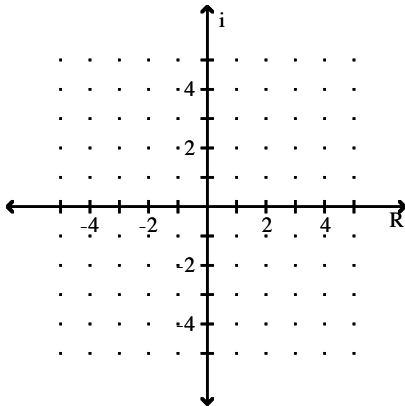
1) $-2 - 3i$

1) _____



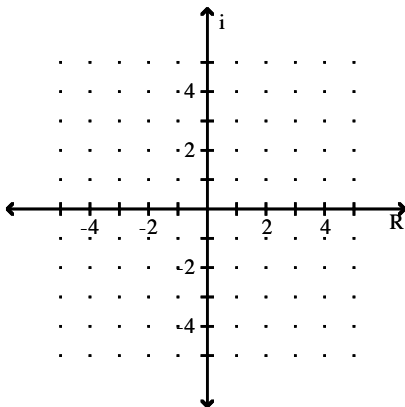
2) $2i$

2) _____

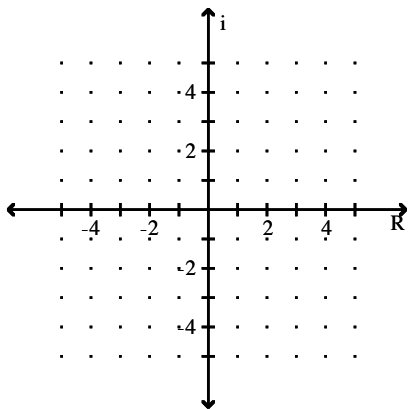


3) -2

3) _____



4) $6 - i$



4) _____

Find the absolute value of the complex number.

5) $z = 17i$

5) _____

6) $z = -8$

6) _____

7) $z = -7 + 15i$

7) _____

Write the complex number in polar form. Express the argument in degrees.

8) $-4i$

8) _____

9) 2

9) _____

10) $-12 - 16i$

10) _____

Write the complex number in polar form. Express the argument in radians.

11) $-5\sqrt{3} - 5i$

11) _____

Write the complex number in rectangular form.

12) $-3(\cos 120^\circ + i \sin 120^\circ)$

12) _____

13) $3(\cos 225^\circ + i \sin 225^\circ)$

13) _____

14) $7(\cos \frac{2\pi}{3} + i \sin \frac{2\pi}{3})$

14) _____

15) $7(\cos \frac{3\pi}{4} + i \sin \frac{3\pi}{4})$

15) _____

Find the product of the complex numbers. Leave answer in polar form.

16) $z_1 = 5(\cos 20^\circ + i \sin 20^\circ)$

16) _____

$z_2 = 4(\cos 10^\circ + i \sin 10^\circ)$

17) $z_1 = 4(\cos 39^\circ + i \sin 39^\circ)$

$z_2 = 3(\cos 5^\circ + i \sin 5^\circ)$

17) _____

18) $z_1 = \sqrt{3} \left[\cos \frac{7\pi}{4} + i \sin \frac{7\pi}{4} \right]$

$z_2 = \sqrt{6} \left[\cos \frac{9\pi}{4} + i \sin \frac{9\pi}{4} \right]$

18) _____

19) $z_1 = 4i$

$z_2 = -6 + 6i$

19) _____

Find the quotient $\frac{z_1}{z_2}$ of the complex numbers. Leave answer in polar form.

20) $z_1 = 5(\cos 200^\circ + i \sin 200^\circ)$

$z_2 = 4(\cos 50^\circ + i \sin 50^\circ)$

20) _____

21) $z_1 = 8 \left[\cos \frac{\pi}{2} + i \sin \frac{\pi}{2} \right]$

$z_2 = 3 \left[\cos \frac{\pi}{6} + i \sin \frac{\pi}{6} \right]$

21) _____

22) $z_1 = 4i$

$z_2 = -6 + 6i$

22) _____

Use DeMoivre's Theorem to find the indicated power of the complex number. Write the answer in rectangular form.

23) $(\cos 30^\circ + i \sin 30^\circ)^{12}$

23) _____

24) $[4(\cos 15^\circ + i \sin 15^\circ)]^4$

24) _____

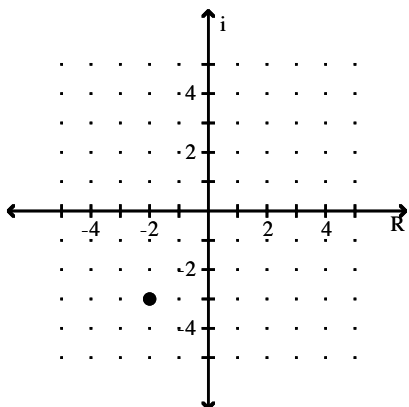
25) $(-\sqrt{3} + i)^6$

25) _____

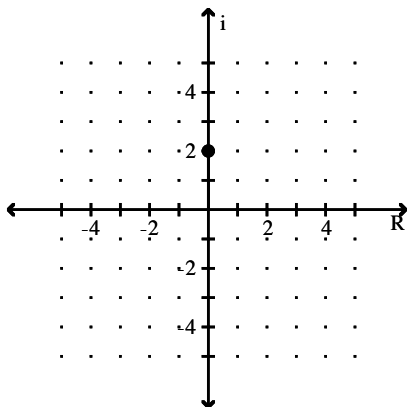
Answer Key

Testname: TRIGONOMETRY 7.5 SHORT VERSION

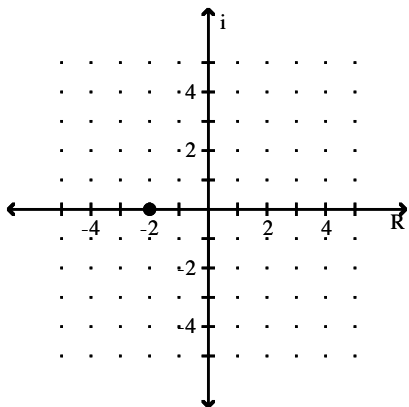
1)



2)



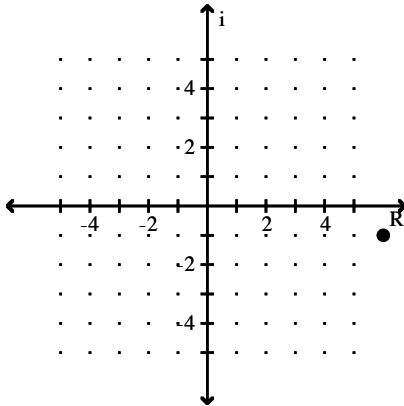
3)



Answer Key

Testname: TRIGONOMETRY 7.5 SHORT VERSION

4)



5) 17

6) 8

7) $\sqrt{274}$

8) $4(\cos 270^\circ + i \sin 270^\circ)$

9) $2(\cos 0^\circ + i \sin 0^\circ)$

10) $20(\cos 233.1^\circ + i \sin 233.1^\circ)$

11) $10\left(\cos \frac{7\pi}{6} + i \sin \frac{7\pi}{6}\right)$

12) $\frac{3}{2} + \frac{-3\sqrt{3}}{2}i$

13) $\frac{-3\sqrt{2}}{2} + \frac{-3\sqrt{2}}{2}i$

14) $-\frac{7}{2} + \frac{7\sqrt{3}}{2}i$

15) $\frac{-7\sqrt{2}}{2} + \frac{7\sqrt{2}}{2}i$

16) $20(\cos 30^\circ + i \sin 30^\circ)$

17) $12(\cos 44^\circ + i \sin 44^\circ)$

18) $3\sqrt{2}(\cos 0 + i \sin 0)$

19) $24\sqrt{2}\left(\cos \frac{5\pi}{4} + i \sin \frac{5\pi}{4}\right)$

20) $\frac{5}{4}(\cos 150^\circ + i \sin 150^\circ)$

21) $\frac{8}{3}\left(\cos \frac{\pi}{3} + i \sin \frac{\pi}{3}\right)$

22) $\frac{\sqrt{2}}{3}\left(\cos \frac{7\pi}{4} + i \sin \frac{7\pi}{4}\right)$

23) 1

24) $128 + 128\sqrt{3}i$

25) -64