

Name: Key

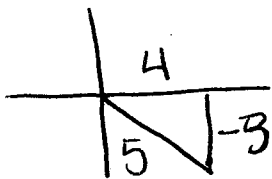
Date: 1/19/18

CC ALGEBRA 2

TROICI

MIDTERM REVIEW #5

1. If the $\sin \theta = -\frac{3}{5}$ and $\cos \theta > 0$, what is the value of $\tan \theta$? QIV S/A T/C



$$\tan \theta = -\frac{3}{4}$$

2. Express 160° in radians and express in terms of π . (Reduce to lowest terms)

DR POT! $\frac{160}{1} \cdot \frac{\pi}{180} = \frac{160\pi}{180} = \boxed{\frac{8\pi}{9}}$

3. What is the number of degrees in an angle whose radian measure is $\frac{11\pi}{12}$?

$$\frac{11\pi}{12} \cdot \frac{180}{\pi} = \boxed{165^\circ}$$

4. If $\sin \theta = -\frac{2}{9}$, and θ is in quadrant III, find the value of $\cos \theta$ using the identity

$$\cos^2 \theta + \sin^2 \theta = 1.$$

$$\cos^2 \theta + \left(-\frac{2}{9}\right)^2 = 1$$

$$\cos^2 \theta + \frac{4}{81} = \frac{81}{81}$$

$$-\frac{4}{81} \quad -\frac{4}{81}$$

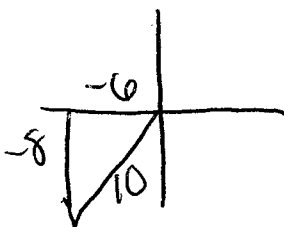
S/A T/C

$$\sqrt{\cos^2 \theta} = \frac{\sqrt{77}}{\sqrt{81}}$$

$$\cos \theta = -\frac{\sqrt{77}}{9}$$

5. If the terminal side of angle θ , in standard position, passes through point $(-6, -8)$, what is the numerical value of $\sin \theta$? Draw a diagram.

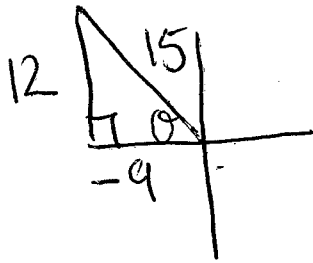
Q III!



$$\begin{aligned} (-6)^2 + (-8)^2 &= r^2 \\ \sqrt{100} &= \sqrt{r^2} \\ r &= 10 \end{aligned}$$

$$\sin \theta = -\frac{8}{10} = \boxed{-\frac{4}{5}}$$

6. A circle centered at the origin has a radius of 15 units. The terminal side of an angle, θ , intercepts the circle in Quadrant II at point C. The y-coordinate of point C is 12. What is the value of $\cos \theta$?



$$\frac{\text{O} \text{ A}}{\text{T} \text{ C}} \ominus$$

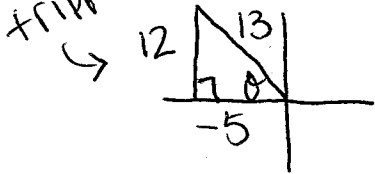
$$x^2 + 12^2 = 15^2$$

$$x^2 = 81$$

$$x = 9$$

$$\cos \theta = \frac{9}{15} = \boxed{-\frac{3}{5}}$$

7. If the $\cos \theta = -\frac{5}{13}$ and $\sin \theta > 0$, what is the value of $\sin \theta$?



$$\frac{\text{O} \text{ A}}{\text{T} \text{ C}}$$

$$\boxed{\sin \theta = \frac{12}{13}}$$

8. Express 210° in radians and express in terms of π . (Reduce to lowest terms)

DR POT!

$$\frac{210}{1} \cdot \frac{\pi}{180} = \frac{210\pi}{180} = \boxed{\frac{7\pi}{6}}$$

9. What is the number of degrees in an angle whose radian measure is $\frac{5\pi}{6}$?

$$\frac{5\pi}{6} \cdot \frac{180}{\pi} = \boxed{150^\circ}$$

10. If $\sin \theta = \frac{2}{3}$, and θ is in quadrant II, find the value of $\cos \theta$ using the identity

$$\cos^2 \theta + \sin^2 \theta = 1.$$

$$\ominus \frac{\text{O} \text{ A}}{\text{T} \text{ C}}$$

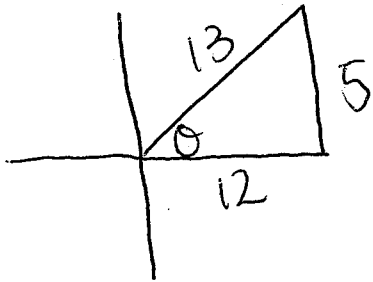
$$\cos^2 \theta + \left(\frac{2}{3}\right)^2 = 1$$

$$\cos^2 \theta + \frac{4}{9} = \frac{9}{9}$$

$$\sqrt{\cos^2 \theta} = \frac{\sqrt{5}}{\sqrt{9}}$$

$$\boxed{\cos \theta = -\frac{\sqrt{5}}{3}}$$

11. If the terminal side of angle θ , in standard position, passes through point $(12, 5)$, what is the numerical value of $\cos \theta$? Draw a diagram.



$$5^2 + 12^2 = x^2$$

$$169 = x^2$$

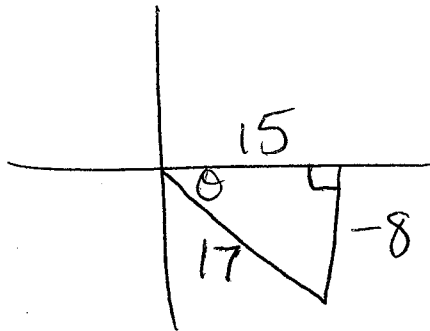
$$x = 13$$

$$\cos \theta = \frac{12}{13}$$

QT S/A T/C (+)

12. A circle centered at the origin has a radius of 17 units. The terminal side of an angle, θ , intercepts the circle in Quadrant IV at point C. The y-coordinate of point C is -8. What is the value of $\cos \theta$?

S/A T/C (+)



$$(-8)^2 + x^2 = 17^2$$

$$x^2 = 225$$

$$x = 15$$

$$\cos \theta = \frac{15}{17}$$

② AZCC - 7 (4 new)

③ DISCRETE - 14 (4 new)

④ Geometry - ~~4~~ 3 *NEW*

⑧ AZCC - 5 (3 new)

2/2 - FLEX