
# Year 11 Methods Week 6 Quiz

25

Name: _____

**1.** Which set of coordinates describes a function? **1**

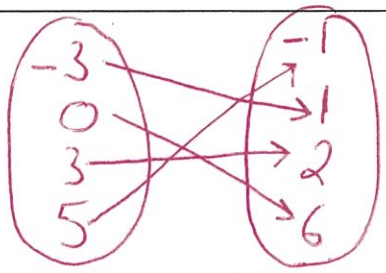
**A.** {(- 5, - 1), (- 3, - 3), (- 1, - 5), (- 5, - 7)}

**B.** {( 6, 3), (4, 5), (2, 3), (0, 5)}

**C.** {( 4, - 3), ( - 4, - 6), ( 4, 3), ( - 4, 6)}

**D.** {( 2, 4), ( 2, - 4), ( 4, 8), ( 6, 2)}

**2.** Make a mapping diagram for the relation. **2**
{(–3, 1), (0, 6), (3, 2), (5. –1)}




1 - correct numbers
1 - correct matching

**3.** A line passes through the points (1, 2) and (5, 22). **5**

**A.** Find the gradient of this line.

$M = \frac{20}{4} = 5$ ✓

**B.** Find the equation of this line.

$2 = 5 \times 1 + C$

$2 = 5 + C \quad \therefore C = -3$ ✓

$y = 5x - 3$ ✓

**C.** Is (3, 25) on this line? Justify your answer.

$25 = 5 \times 3 - 3$

$25 \neq 12$

NO ✓

Does not satisfy the rule ✓

**4.** Write the equation of the line that passes through (8, -2) and is perpendicular to 4x – 2y = 9. **3**

$y = +2x - \frac{9}{2}$

$m = -\frac{1}{2}$ ✓

$-2 = -\frac{1}{2} \times 8 + C$

$2 = C$ ✓

$y = -\frac{1}{2}x + 2$ ✓

**5.** Write the equation of the line that passes through the point (2, 1) and is parallel to y = 4x – 3. **2**

$m = 4$

$1 = 2 \times 4 + C$

$-7 = C$ ✓

$y = 4x - 7$ ✓

| | | |
|---|---|---|
| 6. | Explain the following terms using complete sentences and your own words:<br>**A.** Domain<br>Set of x-values in a relation. It is the input. ✓<br>**B.** Range<br>Set of y-values in a relation. It is the output. ✓ | 2 |
| 7. | Find the reference angle for $\frac{5\pi}{6}$ radians.<br>$\frac{\pi}{6}$ | 1 |
| 8. | Find the exact value of:<br>**A.** sin 150° $\frac{1}{2}$ ✓<br>**B.** tan $\frac{\pi}{4}$ 1 ✓ | 2 |
| 9. | In a circle with radius 10 centimeters, an arc is intercepted by a central angle with measure $\frac{7\pi}{4}$. Find the arc length.<br>$L = r\theta$<br>$= 10 \times \frac{7\pi}{4}$<br>$= \frac{35\pi}{2}$ ✓ ∴ 55cm ✓ | 2 |
| 10. | A sector of a circle has an area of 25 cm$^2$ and a central angle angle of 0.5 radians. Find its radius and arc length.<br>$25 = \frac{1}{2} \times r^2 \times (0.5 - \sin 0.5)$<br>10cm = r ✓<br>$L = 10 \times 0.5$<br>$= 5cm$ ✓ | 2 |
| 11. | If sinθ < 0 and tanθ > 0, in which quadrant does θ lie?<br>Sinθ −<br>Tanθ +<br>S \| A / T \| C<br>Quadrant 3. ✓ | 1 |
| 12. | The lines 2x + 3y = 12 and 4x + 5y = 20 meet at point P. Find the coordinates of point P.<br>$2x + 3y = 12$ $-① \times 2$<br>$4x + 5y = 20$<br>$4x + 3y = 12$<br>$-(4x + 5y = 20)$<br>$-2y = -8$<br>$y = 4$ ✓<br>∴ $2x + 3(4) = 12$<br>$2x = 0$<br>$x = 0$ ✓<br>$P = (0, 4)$ ✓ | 3 |