Sample

# *Contents of Bridging Quick Workbook*


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# 3 Linear Inequalities in One Unknown

## Exercise 3

[TSA 2012 – 2022]

**1.** Fill in each of the following boxes with an inequality sign '>' or '<'.

**(a)** 1 ☐ 5 **(b)** 6 ☐ –2 **(c)** –3 ☐ –8

**2.** Fill in each of the following boxes with an inequality sign '≥' or '≤'.

**(a)** 9 ☐ 3 **(b)** 0 ☐ –1 **(c)** –7 ☐ –5

**3.** Use an inequality to represent each of the following.

**(a)** The value of $x$ is greater than 9. _____

**(b)** The price ($\$P$) of a keyboard is less than \$150. _____

**(c)** The height ($H$ m) of a door is no less than 2 m. _____

**(d)** The volume ($V$ L) of a bottle is at most 1.5 L. _____

**(e)** The number ($N$) of pencil is more than 4. _____

**(f)** The perimeter ($W$ cm) of a rectangle is at least 25 cm. _____

**4.** Represent the solutions of each of the following inequalities on a number line.

**(a)** $x \geq 9$ **(b)** $x < -1$

**(c)** $x > 4$ **(d)** $x \leq -2$

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## Multiple Choice Questions

[TSA 2016 – 2022]

**51.** The distance between the points $A(6, 4)$ and $B(-6, 9)$ is

**A.** 5 units. **B.** 7 units.

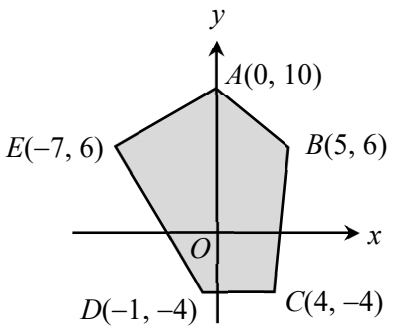
**C.** 12 units. **D.** 13 units. ☐

**52.** If the length of the line segment joining $P(2, 5)$ and $Q(-4, k)$ is $(7 - k)$ units, find the value of $k$.

**A.** $-5$ **B.** $-3$

**C.** 3 **D.** 5 ☐

**53.** Find the area of the shaded region in the figure.




**A.** 85 sq. units **B.** 109 sq. units

**C.** 144 sq. units **D.** 168 sq. units ☐

**54.** The coordinates of the points $P$ and $Q$ are $(3, -1)$ and $(-2, 2)$ respectively. $P$ is translated rightwards by 4 units to $P'$. $Q$ is rotated clockwise about the origin through 90° to $Q'$. Find the coordinates of $P'$ and $Q'$.

| | Coordinates of $P'$ | Coordinates of $Q'$ |
|---|---|---|
| **A.** | $(-1, -1)$ | $(-2, -2)$ |
| **B.** | $(7, -1)$ | $(-2, -2)$ |
| **C.** | $(-1, -1)$ | $(2, 2)$ |
| **D.** | $(7, -1)$ | $(2, 2)$ |

☐

[Technique used in HKDSE Practice Paper P2 Q25]

**55.** $L$ is a straight line passing through $(-1, 0)$ and parallel to the $y$-axis. If a point $A(3, 6)$ is reflected with respect to $L$ to $A'$, find the coordinates of $A'$.

**A.** $(-5, 6)$

**B.** $(-1, 6)$

**C.** $(3, -8)$

**D.** $(3, -1)$ ☐

[Technique used in HKDSE 2021 P2 Q23, 2019 P2 Q25]

**56.** The coordinates of a point $A$ are $(1, -2)$. $A$ is translated upwards by 5 units to a point $B$. $B$ is then reflected with respect to the $x$-axis to a point $C$. Find the $y$-coordinate of $C$.

**A.** $-3$

**B.** $-1$

**C.** 1

**D.** 3 ☐

**57.** $C(2, a + 4)$ and $D(0, a)$ are two points on a straight line $L$. The slope of $L$ is

**A.** $\frac{1}{2}$. **B.** 2.

**C.** $-2$. **D.** $-\frac{1}{2}$. ☐

**58.** It is given that the slope of a straight line $L$ is $\frac{5}{2}$, and $L$ passes through $(-4, 5)$. Find the $y$-intercept of $L$.

**A.** $-4$

**B.** $-2$

**C.** 10

**D.** 15 ☐

Sample

[Technique used in HKDSE 2012 P2 Q8]

**13.** A box contains 300 balls. 70% of them are green balls and the rest are blue balls. If 20% of the green balls and 60% of the blue balls are marked with number, what percentage of balls in the box are marked with number?

[Technique used in HKDSE 2020 P1 Q5]

**14.** There are 6000 visitors to an exhibition today. The number of non-local visitors is 40% more than that of local visitors. Let the number of local visitors be $x$.

**(a)** Express the number of non-local visitors in terms of $x$.

**(b)** Find the number of local visitors to the exhibition.

[HKDSE 2014 P2 Q9]

**15.** The area of a square is 10% larger than the area of a rectangle. The difference in the area of the square and the rectangle is 5 $cm^2$. Find the area of the square.

**16.** The average temperature of a city was 25°C yesterday. The average temperature is 28°C today.

**(a)** Find the change in the average temperature over these two days.

**(b)** Find the percentage change in the average temperature over these two days.

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