DSE

Dr. Shreyank Educare

Grade 10 Math Exam Study Pack

Practice Questions + Step-by-Step Solutions
(BC Curriculum Aligned)

Unlock Your Potential With Expert Tutoring

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How to Use This Pack

This study pack is designed to simulate a mini-exam environment to help you prepare for your Grade 10 assessments.

Recommended Strategy:

1. Find a quiet workspace and remove distractions.
2. Set a timer for **25 minutes**.
3. Complete the questions on Page 3 without looking at the solutions.
4. Once finished, check your work against the detailed **Solutions Section** starting on Page 4.
5. Highlight any areas where you struggled and review those concepts specifically.

Exam-Style Questions

Instructions: Show all your work in the space provided.

1. Linear Equations (Multi-step)
Solve for x:

$$5(x - 2) = 2x + 14$$

2. Polynomials
Factor the following trinomial completely:

$$3x^2 - 9x - 30$$

3. Systems of Equations
Solve the following system algebraically (substitution or elimination):

$$\begin{cases} y = 2x - 3 \\ 3x + 2y = 29 \end{cases}$$

4. Trigonometry
In a right-angled triangle, angle $\theta = 35^\circ$ and the side *adjacent* to the angle is 12 cm. Calculate the length of the *hypotenuse* (x). Round to 1 decimal place.

5. Word Problem

A taxi company charges a flat ”start fee” of $4.00 plus $2.50 per kilometer traveled. If a customer’s total fare was $49.00, how many kilometers did they travel?

Step-by-Step Solutions

1. Linear Equations

Question: Solve $5(x-2) = 2x + 14$

Step 1: Expand the brackets on the left side.
$5x - 10 = 2x + 14$

Step 2: Move variables ($2x$) to the left and constants (-10) to the right.
$5x - 2x = 14 + 10$

Step 3: Simplify.
$3x = 24$

Step 4: Divide by 3 to isolate x.
$x = \frac{24}{3}$
Answer: $x = 8$

2. Polynomials

Question: Factor $3x^2 - 9x - 30$

Step 1: Look for a Greatest Common Factor (GCF).
All terms are divisible by 3.
$3(x^2 - 3x - 10)$

Step 2: Factor the trinomial inside the brackets.
We need two numbers that multiply to -10 and add to -3.
Factors of -10: $(1, -10), (-1, 10), (2, -5), (-2, 5)$.
The pair $(2, -5)$ adds to -3.

Step 3: Write the final factors.
Answer: $3(x-5)(x+2)$

3. Systems of Equations

Question: Solve $\begin{cases} y = 2x - 3 \quad (1) \\ 3x + 2y = 29 \quad (2) \end{cases}$

Step 1: Substitute equation (1) into equation (2).
$3x + 2(2x - 3) = 29$

Step 2: Expand and solve for x.
$3x + 4x - 6 = 29$
$7x - 6 = 29$
$7x = 35$
$x = 5$

Step 3: Substitute $x = 5$ back into equation (1) to find y.
$y = 2(5) - 3$
$y = 10 - 3$
$y = 7$

Answer: The solution is $(5, 7)$.

Step-by-Step Solutions (Continued)

4. Trigonometry

Question: Angle $\theta = 35°$, Adjacent = 12 cm, Find Hypotenuse (x).

Step 1: Label the sides.
We have Adjacent and need Hypotenuse. Looking at SOH-**CAH**-TOA, we use Cosine.

Step 2: Set up the ratio.
$\cos(\theta) = \frac{\text{Adjacent}}{\text{Hypotenuse}}$
$\cos(35°) = \frac{12}{x}$

Step 3: Isolate x.
Multiply by x: $x \cdot \cos(35°) = 12$
Divide by $\cos(35°)$: $x = \frac{12}{\cos(35°)}$

Step 4: Calculate.
$x \approx \frac{12}{0.819}$
Answer: $x \approx 14.6$ **cm**

5. Word Problem

Question: Start fee $4.00, $2.50 per km. Total $49.00. Find distance.

Step 1: Define variables.
Let k = number of kilometers.
Cost Equation: $C = 4 + 2.50k$

Step 2: Set equal to total cost and solve.
$49 = 4 + 2.50k$

Step 3: Isolate the variable term.
Subtract 4 from both sides:
$45 = 2.50k$

Step 4: Solve for k.
$k = \frac{45}{2.5}$
Answer: 18 kilometers

End of Solutions

Need More Help?

Math concepts build on one another. If you found these questions difficult, or if you want to ensure you achieve the high grades necessary for university admission, we are here to support you.

At **DSE**, we specialize in breaking down the BC Math Curriculum into manageable steps, building both your skills and your confidence.

Book Your Free Consultation

Let's discuss your academic goals.

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