

MPM 2D

EXAM REVIEW HANDOUTS-Solutions

Sample Exam Solutions

PART 1:

1. $(2, -1)$ 2. a) $m = -4/3$ b) $(-1, 2)$ c) 10 units 3. $x^2 + y^2 = 13$
4. $y_1 = 45 - x$ $y_2 = (243 - 5x) \div 7$ 5. slope of XY and slope of XZ are negative reciprocals,
 $\angle X = 90^\circ$. 6. $y = \frac{-3}{2}x + \frac{9}{2}$ or $3x + 2y - 9 = 0$

PART 2:

1. a) $8n(2n+3)$ b) $(x-9)(x-7)$ c) $(3a-2)(2a+3)$ d) $5(x-4)(x+4)$
2. $y = -2x^2 + 12x - 13$ 3. -7 or -3 4. 4.81 or -2.15 5. $V_x(3, 12)$ 6. $V_x(4, -10)$
7. a) $y = \frac{-1}{2}x(x-2)^2 + 18$ b) $y = 2(x+2)^2 - 3$ 8. a) $y = \frac{-4}{75}x^2$ b) yes it can pass.
9. $R = -200x^2 + 200x + 120000$, Price = \$500. 10. a) 4.05 s b) $V_x(2, 21)$, NO!

PART 2. TRIG AND SIMILAR FIGURES

1. $CD = 15$ cm 2. $\angle A = 31.6^\circ$ 3. $x = 14.77$ cm 4. $\angle C = 37.3^\circ$ 5. $x = 9.34$ cm 6. $x = 34.9$ cm
7. 18.6 m and 33.1 m 8. 4 km

SAMPLE EXAM 2:

PART A: 1. (c) 2. $m=2, b=-15/2$ 3. no solution 5. graphing, substitution, elimination
6 a) $y=-3/5x + b$ (b can be any value) b) $y = 5/3x + b$ (b can be any value) 7. (0,0), $r=9$,
(0,9) and (0, -9) 9. (b) 10. non-linear 11. a) $36x^8$ b) $-2x^2-11x$ c) $9x^2-12x+4$
12. a) $(3x+5)^2$ b) $(3x-4)(5x+1)$ c) $(4x-5)(4x+5)$ 13. a) $t=2, t=0$ b) $x=12, x=-4$
PART B: 1. football = \$35, soccer ball = \$50 2. a) (2, 4) b) D(7, 3) c) length = 5.1
3. a) $y=-2/3x + 4$ b) $y = 3/2x + 29/4$ 4. a) $t=0, t=4$ b) $Vx(2, 20)$ d) 20m at 2 secs
e) 4 secs.

SAMPLE EXAM 3:

PART A: 1. a) max b) $Vx(3, 4)$ c) $x=3$ d) $y=-14$ 2. horizontal shift 2 units left, vertical
shift 3 units down, a reflection about the x-axis 3. no real roots 4. $x=\pm\sqrt{6}$ 5. x represents
length, y represents width, $2x + 2y=500$ and $xy=14400$ 6. $x=12.8$ 7. a) 0.4067 b) 63^0
8. a) $x=16.4$ b) $x=58^0$
PART B: 1. $y = -1/3(x-8)^2+3$ 2. $Vx(-2, 7)$, axis of symmetry $x=-2$ 3. 9.7cm and 2.3cm
4. $9.8 - 2.0 = 7.8$ secs. 5. $x = 70$ m 6. 34.2 m 7. $P=1586.1$ m