

Section 1.5-1.6: Extra Practice Problems

P. 40, # 47-50

P. 48, # 30, 31

P. 49, # 34-37

P. 40

47. $A = 452 \text{ in}^2$

$A = \pi r^2$

$452 = \frac{\pi r^2}{\pi}$

$\sqrt{143.88} = r^2$

$r \approx 11.99$

so, $\{B(12 \text{ in})\}$

48. $P = 48 \text{ m}$

$l = 2w$

$w = w$

$P = 2l + 2w$

$48 = 2(2w) + 2w$

$48 = 4w + 2w$

$48 = 6w$

$8 \text{ m} = w$

$l = 2w$

$l = 2(8)$

$l = 16 \text{ m}$

so, $\{G\}$

49. $A = \frac{1}{2}bh$

$A = \frac{1}{2}(4x)(x+2)$

$A = \frac{1}{2}(4x^2 + 8x)$

$A = 2x^2 + 4x$ so, $\{A\}$

50. $C = 2\pi r$

$C = 2\pi(37.2)$

$C = 233.73 \text{ in}$

$\Rightarrow 19.48 \text{ ft}$

$P = a + b + c$

$P = 9 + 9 + 9$

$P = 27 \text{ ft}$

$P = 2l + 2w$

$P = 2(6) + 2(5)$

$P = 12 + 10$

$P = 22 \text{ ft}$

$P = 4s$

$P = 4(90)$

$P = 360 \text{ in}$

$P = 30 \text{ ft}$

$\{J\}$

P. 48

30. Find the length of each side of the triangle.

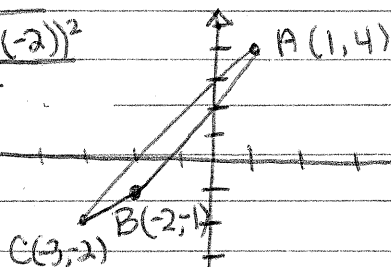
$AC = \sqrt{(1-(-3))^2 + (4-(-2))^2}$

$AC = \sqrt{(4)^2 + (6)^2}$

$AC = \sqrt{16 + 36}$

$AC = \sqrt{52}$

$AC = 7.21$



$AB = \sqrt{(1-(-2))^2 + (4-(-1))^2}$

$AB = \sqrt{(3)^2 + (5)^2}$

$AB = \sqrt{9 + 25} = \sqrt{34} = 5.83$

$BC = \sqrt{(-2-(-3))^2 + (-1-(-2))^2}$

$BC = \sqrt{(1)^2 + (1)^2}$

$BC = \sqrt{1 + 1} = \sqrt{2} = 1.41$

Perimeter = $5.83 + 1.41 + 7.21 \Rightarrow P = 14.45 \approx 14.5$

$$31. A = \frac{1}{2}bh$$

$$A = \frac{1}{2}(b)(\sqrt{2})$$

$$A = \frac{1}{2}(BC)(\sqrt{2})$$

$$A = \frac{1}{2}(\sqrt{2})(\sqrt{2})$$

$$A = \frac{1}{2}(\sqrt{4})$$

$$A = \frac{1}{2}(2) = \boxed{1 \text{ unit}^2}$$

→ We know $BC = \sqrt{2} = 1.41$ from #30!

P.49

$$34. EF \Rightarrow (2)^2 + (2)^2 = c^2$$

$$4 + 4 = c^2$$

$$8 = c^2$$

$$c = \sqrt{8} \approx 2.83$$

$$\textcircled{GH} \Rightarrow (3)^2 + (3)^2 = c^2$$

$$9 + 9 = c^2$$

$$18 = c^2$$

$$c = \sqrt{18} \approx 4.24$$

\textcircled{B}

$$JK \Rightarrow (2)^2 + (5)^2 = c^2$$

$$4 + 25 = c^2$$

$$29 = c^2$$

$$c = \sqrt{29} \approx 5.39$$

$$LM \Rightarrow (3)^2 + (4)^2 = c^2$$

$$9 + 16 = c^2$$

$$25 = c^2$$

$$c = 5$$

$$35. m = \left(\frac{1+4}{2}, \frac{-1+3}{2} \right) = \left(\frac{5}{2}, \frac{2}{2} \right) = (2.5, 1)$$

$$\begin{matrix} \swarrow & \searrow \\ (1, -1) & (4, 3) \end{matrix}$$

$$m = \left(\frac{-1+4}{2}, \frac{-2+(-3)}{2} \right) = \left(\frac{3}{2}, \frac{-5}{2} \right) = (1.5, -2.5)$$

$$\begin{matrix} \swarrow & \searrow \\ (-1, -2) & (4, -3) \end{matrix}$$

$$d = \sqrt{(2.5-1.5)^2 + (1-(-2.5))^2}$$

$$d = \sqrt{(1)^2 + (3.5)^2}$$

$$d = \sqrt{13.25}$$

$$d = 3.64 \approx 3.6 \textcircled{G}$$

$$36. m = \left(\frac{7+(-5)}{2}, \frac{-3+6}{2} \right) = \left(\frac{2}{2}, \frac{3}{2} \right) = (1, 1.5) \textcircled{D}$$

$$37. d = \sqrt{(-5-3)^2 + (1-5)^2} \quad d = \sqrt{64+16} \quad d = 8.9 \textcircled{J}$$

$$d = \sqrt{(-8)^2 + (-4)^2}$$

$$d = \sqrt{80}$$