

11.5 (2) - Pg 613-614 / 27-32, 34-37

27.)  $a = 1, 7$

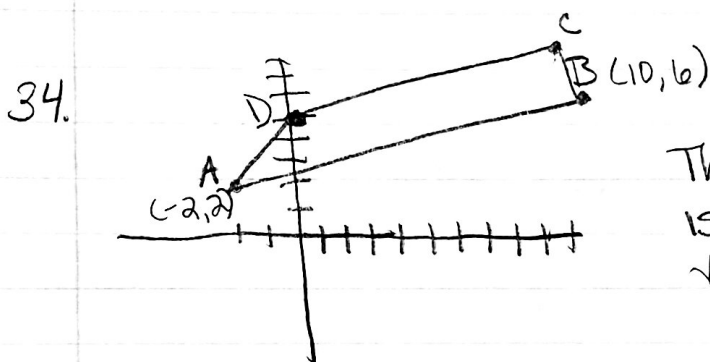
28.)  $a = 17, -13$

29.)  $a = -2, 4$

30.)  $a = -2, -12$

31.)  $a = -10, 4$

32.)  $a = 2, 38$



$$\overline{DB} = \sqrt{100+1} = \sqrt{101}$$

$$\overline{AC} = \sqrt{121+36} = \sqrt{157}$$

The trapezoid is not isosceles because  $\sqrt{101} \neq \sqrt{157}$

35. L(-4, -3) M(2, 5) N(-13, 10) P(x, -2)

$$\begin{aligned} \overline{PL} &= \overline{PM} \\ \sqrt{(x-(-4))^2 + (-2-(-3))^2} &= \sqrt{(x-2)^2 + (-2-5)^2} \\ (\sqrt{(x+4)^2 + 1})^2 &= (\sqrt{(x-2)^2 + 49})^2 \\ (x+4)^2 + 1 &= (x-2)^2 + 49 \\ x^2 + 8x + 16 + 1 &= x^2 - 4x + 4 + 49 \\ x^2 + 8x + 17 &= x^2 - 4x + 53 \\ -x^2 + 4x &\quad -x^2 + 4x \\ \hline 12x + 17 &= 53 \\ -17 \quad -17 & \\ \hline 12x &= 36 \\ x &= 3 \end{aligned}$$

36.  $Q(1,7)$   $R(3,1)$   $S(9,3)$   $T(7,d)$

$$\overline{QR} = \sqrt{(2)^2 + (6)^2}$$
$$= \sqrt{40}$$

$$\overline{QT} = \sqrt{6^2 + (2)^2}$$

$$d - 7 = 2$$
$$\boxed{d = 9}$$

37.  $(132, 428)$   $(254, 105)$

$$d = \sqrt{14884 + 104329}$$

$$d = \sqrt{119213}$$

$$(\sqrt{119213})(0.316) = 109.1060646 \approx \boxed{109 \text{ miles}}$$